THE SOCIO-ECONOMIC, TECHNICAL AND INSTITUTIONAL DIMENSIONS OF NON-PAYMENT FOR WATER: SOLUTIONS AND LESSONS FOR SOUTH AFRICA

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WATER RESEARCH COMMISSION

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The socio-economic, technical and institutional dimensions of non-payment for water: solutions and lessons for South Africa

Final Report

Report

to the Water Research Commission

by

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EXECUTIVE SUMMARY

BACKGROUND

Water is a social and economic good, a human right, and is provided by nature. In South Africa everyone has the right to access sufficient water (The Constitution of the Republic of South Africa, 1996). The provision of water services is guided by both national and local legislation and policy, including the 1998 White Paper on Local Government, the Water Services Act of 1997, the National Water Act of 1998 and customer service agreements at the local government scale. These acts provide a regulatory framework for water services and set standards for water quality and sanitation. While the provision of services in South Africa, as in many countries in the world, is the responsibility of public entities, given that water is considered to be a public good, there is some level of commodification of water, as most users are expected to pay the state for the service. In South Africa, the state subsidises water for those who cannot afford to pay for it, and since 2001 the national government has had a policy of free basic water for indigent households. If households use more than the free basic water allowance, then they are required to pay for water. However, ensuring payment for water services, where residents do not meet the criteria for free basic water, has become a major challenge for municipalities across South Africa, and this has impacted on the financial sustainability of the provision of water services. Non-payment for water services falls within non-revenue water. Many municipalities across South Africa have experienced an increase in non-revenue water, as a result of water leaks, water being tapped off from municipal systems illegally and non-payment for water services.

The provision and funding of water services in municipalities in South Africa is challenging as a result of population growth (more people require water services), rapid and extended urbanisation (Schmid, 2018) weak governance, financial constraints, lack of infrastructure development in urban areas and the rural periphery, water scarcity and climate risk. The funding model established post-apartheid, assumed that tariffs would be low enough to ensure universal affordable access to quality services, and high enough to ensure local government financial viability. In practice, however, South African municipalities are not able to meet their obligations in terms of the provision of affordable water services through the existing financial models which include revenue generated from the provision of services to paying customers, as well as national government grants, some of which are non-conditional.

Water Service Authorities and related Water Service Providers, who are responsible to finance and deliver water services to meet Constitutional Rights, are struggling to do so, in a context where water is considered to be both a social and an economic good. How water services are funded has become a critical debate within both national and local government and non-state institutions. There is a call to reform the current approach, either by changing the funding model or by changing citizens behaviour. This needs to be done to ensure that a socially, politically and environmentally acceptable funding model is in place that meets the costs associated with safely, efficiently, fairly and sustainably providing water, in a manner which secures water for the poor, through free basic water or an adequate social wage, with cross subsidisation and payment for water services by those who can afford to pay, as well as adequate funding provided by national government through conditional grants. Domestic users in different settlement types have varied perceptions and understanding of, and practices towards payment for water services. It is this critical issue: what makes citizens pay for water services, that is the focus of this report.

This study, which is framed within the social sciences, sought to understand the social, political, technical, historical and geographical reasons for non-payment for water services by domestic users, using Durban as a case study.

AIMS

The aims of the project were:

1. To produce a position paper on the risk to Municipalities of non-payment for water services and to understand the legal, socio-economic, technical, institutional dimensions and spatiality of the problem.
2. To understand the changing socio-economic and technical-institutional dimensions of non-payment for water through empirical research within the context of affordability, willingness to pay and ability to pay.
3. To develop and test (monitor and evaluate) a range of innovative socio-economic, behavioural and technical-institutional interventions to facilitate the improvement of payment for water.
4. To develop new social compacts between state and citizens around payment for water services which inform broader municipal policy and practice.

The study was impacted by the COVID-19 pandemic, social unrest in Durban in 2021 and the significant floods in 2022. As a result of these major disruptions, field research was delayed and the applied components of the project, namely aims 3 and 4 were not achievable, as these required eThekwini Water and Sanitation to implement the pilot projects for evaluation. The outcomes of the research are useful to policy and practice of eThekwini Municipality, as well as other municipalities in South Africa, with the testing of the pilot projects to be undertaken in a new research project.

METHODOLOGY

The study was organised into three work packages. The first work package aimed to contextualise and understand the socio-economic and technical-institutional dimensions of non-payment for water services in eThekwini Municipality and South Africa. This work package included four literature reviews, as well as meetings with officials from eThekwini Water and Sanitation Unit and interviews with experts in South Africa in the water sector. Household surveys (30 per settlement type) were undertaken in four settlement types (peri-urban areas, townships, low cost housing projects and suburbs) in January 2022 to determine domestic users positions and practices in relation to payment for water services. Work package two focused on developing pilot socio-economic and technical-institutional interventions in different contexts to support improved payment for water. A city-wide survey of 500 households across all settlement typologies was undertaken in August 2023 as part of this work package, to determine residents' conceptions of water scarcity, their responses to water service and their willingness to pay for water services. Further meetings and learnings labs were held with officials in eThekwini Water and Sanitation Unit between 2023 and 2024 to develop pilot projects that could be implemented in Durban to improve payment for water services. A guideline for these pilot interventions was produced. The final work package, work package 3, which focused on monitoring and evaluation of social processes, including the building of social compacts and state-citizen relationships, and the evaluation of pilot socio-economic and technical-institutional interventions, developed to address payment

for water services was not possible due to severe capacity constraints within eThekwini Municipality as a result of the devastating impact of the April 2022 floods in Durban on water and sanitation services.

RESULTS AND DISCUSSION

In South Africa, water services are provided to residents by Water Service Authorities (WSAs, which in most cases are municipalities through Water Service Providers). These WSAs must be funded so that they can provide water through available and functioning infrastructure. Across South Africa, and in eThekwini Municipality in particular, how water services should be funded is challenging and contested. WSAs collect revenue, try to keep water affordable, and provide services even for those who cannot pay. Funding for WSAs comes from taxes (via national transfers, conditional grants as well as municipal taxes) and payments from water users (including a connection tariff and payments from users who do not qualify for free basic water).

One reason it is difficult to determine a fair and sustainable system for funding water services is because the cost of providing water to users is difficult to calculate and is changing. WSAs are facing a number of challenges, some of which are typical and predictable, and some of which are novel and uncertain. There are costs associated with obtaining water from bulk water providers, determined by water security and water quality. Maintaining water infrastructure, and particularly keeping ageing infrastructure working (which reduces non-revenue water) requires significant investment. Techno-managerial skills are needed to ensure the infrastructure works well. Further, there are costs associated with expanding infrastructure to residents who are not well serviced or to new settlement areas, including to those who may not be able to reliably pay for services. Corruption and mismanagement can divert important, limited resources and disasters can drain the fiscus, as WSAs replace and fix damaged infrastructure. Water availability itself is also changing, and eThekwini Municipal Area is facing new patterns of rainfall, flows and water demands (linked to climate change and urbanisation) as well as reduced water quality (linked to increased pollution and the degradation of ecosystem services), and uncertainty remains in terms of how they can be addressed.

The research identified five broad frameworks that need to be considered in the analysis of payment for water services: governance; territory and state-citizen relationships; infrastructure provision over space and time; financial flows in cities; the context of settlements (settlement typologies); and social and environmental risk.

WSAs have the power to create their own revenue model, setting tariffs and payment systems within this wider framework, but it can be difficult to determine appropriate costs and who should pay them. Many residents, 55% in eThekwini Municipal Area, do not pay for water services: some cannot afford to pay, some do not want to pay for unreliable services, and others have additional reasons for non-payment, that reflect an unwillingness to form part of the state's approach to payment for water services.

The study found that there are six main reasons why domestic uses are willing or not willing to pay for water services: a) inability to pay; b) low-income but with other priorities; c) belief that the model for payment is unfair; d) belief that the quality of service is insufficient and that withholding payment is justified and/or might improve service quality; e) short-sighted self-interest without direct consequence; and f) ambiguities in relation to communal tenure. These six reasons are expanded upon in the position paper and in the paper submitted for publication as an outcome from this research.

The first two aims of the project were achieved, however, the application of the learnings and knowledge developed in work package one and two, could not be implemented through work package three, as a result of the lack of capacity within eThekwini Municipality to implement the pilot projects as a result of the 2022 floods. The results of the project were presented in a webinar on 12 November, 2024: *The socio-economic, technical and institutional dimensions of non-payment for water: solutions and lesson for South Africa* with additional contributions from Mr Jay Bhagwan, Executive Manager: Water Use, Wastewater Resources and Sanitation Futures, Water Research Commission; Dr Nick Simpson, University of Cape Town who presented a paper: *Risk from responses to climate impacts on municipal water supplies: lessons from the Cape Town drought*; Simon Scruton, eThekwini Water and Sanitation Services, eThekwini Municipality who presented a paper: *Payment for water services: the municipal perspective*; and Professor Cathy Sutherland, WASH R&D Centre, University of KwaZulu-Natal, who presented a paper: *Conceptual and spatial mapping of payment for water services in eThekwini Municipal Area*. The webinar was well attended and it has been circulated widely. The results of the research for this project have been included in a paper submitted for publication in a South African journal (December 2024), with this paper under review.

CONCLUSIONS

This report recognises the difficult position of the state in relation to the provision of water services. The municipality needs to build residents' trust by ensuring that the water supply is reliable, but it is difficult to do so without sufficient funding. In the context of existing structural poverty, South African municipalities like eThekwini cannot resolve economic challenges associated with water services by creating responsible citizens who fully cover the cost of their own infrastructure. Without broader changes, some people simply cannot afford water services, and lack of water services causes unacceptable social and ecological consequences. Yet at present, without more funding, the quality of the service is declining as the state cannot expand or maintain the networks and operations for water service provision.

This decline is not uniform: there are notable differences between water systems across settlement types, reflecting the inequalities of the past and the failure of transformation in the present. This pattern is becoming increasingly evident as a generation of capital investment has not taken place, resulting in the water provision system reaching a tipping point. We can see four broad potential responses here. The first is that citizens want certainty, transparency and clarity on how water service provision works and is implemented, and they also want this system to be fair. The second is around continuing to provide heterogeneous services and investing in technological alternatives (see Jaglin 2008). Water service provision is provided through centralised modernist systems, which do not reach all citizens equally; the state may not be able to provide this service to all households. Third, the current model which differentiates between free basic water and a tariff system, can work in principle, but the nuances and complexities of applying this model in practice needs greater engagement and reflection, as this report has shown, due to its complexity in reality. Fourth, the state must ensure that payments are made by those who are able to afford them. Finding the lines here is difficult, and can only be done through monitoring and consultation.

Achieving this means both more action by the eThekwini Water and Sanitation Unit to improve services, and developing better trust and communication. The successful and sustainable provision of water services by a state entity requires a shared understanding of a social contract. This social contract is different from a typical

business arrangement, for it includes the subsidisation of those who cannot afford to pay for water on their own. Crucially, funding must come from somewhere, and those able to pay must see that their payments are being well-used, ensuring water services both for themselves and across the municipality.

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Reference Group Members

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ACRONYMS & ABBREVIATIONS

EWS	eThekwini Water and Sanitation Unit
ICESCR	International Covenant on Economic, Social and Cultural Rights
NRW	Non-revenue water
WASH	Water, sanitation and hygiene
WHO	World Health Organisation
WRC	Water Research Commission
WSA	Water Services Authority
WSP	Water Services Provider

GLOSSARY

Non-revenue water	The difference between the amount of water that is released into a distribution system and the amount that is billed to consumers. It is water that is lost or unaccounted for, and it can be a financial burden for water utilities.
Water tariff	Price assigned to water supplied by a public utility through a piped network to its customers
Water Services Authority	An entity, most often a local municipality that provides water and sanitation services to its residents
Water Services	The procurement, treatment and distribution of water for domestic use, or any other purposes for which water can be used
Low cost housing	Housing that is provided by the state, as subsidised public housing, as part of the social wage for the poor.
Peri-urban	An area on the periphery of the urban core, which reflects both urban and rural characteristics.
Free Basic water	A policy in South Africa introduced in 2000, that provides a minimum of 6,000 litres (6 kilolitres) of water per month to households who qualify for it, for free.
Socio-Economic	Relating to or concerned with the interaction of social and economic factors
Technical-institutional	The relationship between technology and the institutions used to produce or embed technology in society, including knowledge institutions
Traditional authority	A form of governance that is based on customary law, culture, customs and history.
Township	Settlements that were developed during the apartheid era as a result of the Group Areas Act (1950) to house people of colour, usually located in peripheral areas or as sites where labour was required.

CHAPTER 1: INTRODUCTION AND CONTEXT

1.1 INTRODUCTION

Globally, public and private utilities are struggling to meet the demand for the provision of safe and affordable water services in rapidly growing cities (Simpson, et al., 2019; UN-Habitat, 2017; Rusca and Schwartz, 2016; Anguelovski, et al., 2014). Service providers (the state and/or private sector) face challenges of: capital and operational funding for the maintenance and expansion of water services and related infrastructure, particularly in the face of increasing demand; water insecurity and availability; environmental risks; affordability of services and low levels of cost recovery; and the development of fiscal models that are appropriate and fair for a resource that is a human right. Climate change threatens the resource base of utilities, shifting supply and demand, damaging infrastructure, and changing patterns of consumption and hence cost recovery. It is therefore a significant risk to the financing and provision of urban services (Simpson et al, 2019; Baleta and Winter 2017).

South Africa retains public control over the provision of water services. Citizens pay for water services using tariff structures determined by the state, which includes the provision of free basic water to the poor. Water Service Authorities (WSA; in most cases municipalities, with their associated Water Service Providers (WSP)) face challenges in the provision of water services, including water scarcity and the degradation of ecosystem services (the resource base); a funding model that requires municipalities to self-generate revenue to pay for water services that are deemed a public or social good; the need to balance provision of services to the poor, with cost recovery through revenue generation; maintenance of aging infrastructure, while expanding service provision infrastructure in rapidly growing cities with increasing informality; systematic inequality in service provision; increase in non-revenue water, related to leaks and non-payment for services; lack of capacity and techno-managerial skills in a sector that needs to diversify and find new models for universal service provision; and corruption (Lebek et al., 2021; Ndlovu, 2021; Oskam et al., 2021; Scheba, 2021; Sutherland et al., 2014).

A WSP, usually the water and sanitation department or unit within a municipality, is required to provide water services aligned with the Constitution (1996), the Water Services Act (1997) and local by-laws and customer service agreements. WSA's provide services and set tariffs, which vary across municipalities in South Africa, to recover costs through revenue generation. Tariffs can include two elements: a fixed charge or flat rate for the connection and a volumetric charge based on water usage or consumption. Water usage is usually charged on a sliding scale with high water users paying more for the increased volumes they consume. The fixed costs usually cover production and administration and the consumption costs cover the costs of operation and maintenance.

Local Government, as WSAs are mandated to prioritise provision of services to those who do not have access to basic water and sanitation services. Based on the Water Services Act, each citizen should have access to 25 litres per day or 6000 litres per household. The Free Basic Water Policy, which was initiated in Durban by eThekwini Water and Sanitation (EWS) Unit under the leadership of Neil Macleod in 1998, and which was implemented at national government level in 2007, guarantees a minimum amount of free water (6,000 litres per household per month as per WHO guidelines) to indigent households, guided by the 2005 Municipal

Indigent Policy Framework (Sutherland et al., 2014). Free basic water forms part of the social wage in South Africa. However, the implementation of free basic water to all households is not always achieved, and the amount per household is not adequate for the environmental conditions and household size in South Africa (Scheba, 2021; Ledger and Rampedi, 2020).

Through these approaches to the provision of water services, "local government is envisaged as a critical site of redistribution" (Scheba, 2021, p 632) as framed by the 1998 White Paper on Local Government. Universal access to services is a critical role of local government in addressing poverty and inequality (Dugard, 2016). However, according to Ndlovu (2021, p 17) "the post-apartheid government has continuously used human rights language to frame its interventions. But its chosen municipal delivery model has not addressed the injustices of our past. Today's municipalities are contributing towards a deepening of inequality, both through their intended model of provisioning and their ethical and governance failures". According to Ledger (2021) poor households are spending 25% of their monthly income on basic services. In KwaZulu-Natal and Durban, based on empirical evidence, households are able to access a reasonable level of free basic services, other than electricity, spending most of their household income on food, transport, schooling, connectivity, housing rentals and remittances. The challenge for local government is that it has to both provide universal services to all and it needs to generate its own cost recovery.

This study has focused on one dimension of provision of water services, namely payment for water services by domestic users. Non-payment for water services is increasing in municipalities across South Africa and is threatening the sustainability of water service provision. Research in South Africa has shown how the ability to pay for services, even within a public system (state provision of water services), influences access to and reliability of water services (Sutherland et al., 2023; Cirolia and Robbins, 2021). While payment for water services is considered to be a financial, technical and operational issue, it is also deeply political, historical, spatial, economic and social.

This final report presents the results of a study on the payment for water services in South African municipalities. It uses Durban as a lens to explore the complex historical, political (institutional), social, economic, environmental and spatial relationships which inform cost recovery for water services, going beyond the more traditional techno-managerial and operational approaches. The study focused on the residential sector in relation to payment for water services, and not on businesses or industry.

1.2 PROJECT AIMS

The aims of the project were:

1. To produce a position paper on the risk to Municipalities of non-payment for water services and to understand the legal, socio-economic, technical, institutional dimensions and spatiality of the problem.
2. To understand the changing socio-economic and technical-institutional dimensions of non-payment for water through empirical research within the context of affordability, willingness to pay and ability to pay.

3. To develop and test (monitor and evaluate) a range of innovative socio-economic, behavioural and technical-institutional interventions to facilitate the improvement of payment for water.
4. To develop new social compacts between state and citizens around payment for water services which inform broader municipal policy and practice.

1.3 SCOPE AND LIMITATIONS

The study focused on payment for water services, in terms of willingness to pay, as well as practices for payment for water services for domestic water users in Durban, across a range of settlement typologies. The study used Durban as a case study to draw out the main reasons why people pay, or do not pay, for water services, which is relevant and can be applied to cities elsewhere. Durban is an excellent learning lab given that the city has adopted an innovative and experimental approach to water governance, and because it has 43% of its land area on Ingonyama Trust land, which is governed both by traditional authorities and the municipal administration. It has rapidly densifying peri-urban areas under dual governance and 26% of its residents living in informal settlements. It was also the city that pioneered the provision of free basic water, which was later adopted as policy at national level.

The limitation of the study was that the municipality could not implement the interventions proposed due to a lack of capacity as a result of the impact of the 2022 floods on EWS.

CHAPTER 2: METHODOLOGY

2.1 INTRODUCTION

The project was located within the social sciences and adopted a transdisciplinary research approach where researchers engaged with societal actors over a critical challenge facing both the municipality and citizens, namely payment for water services. The project aims were developed jointly with municipal officials and reflected the concerns of citizens as identified through previous research undertaken by the research team in Durban. The framing of the research problem was therefore participatory and collaborative.

2.2 WORK PACKAGES AND METHODS

The project was organised according to three work packages. Work package one and two were completed as part of this study, but it was not possible to achieve the aims and outputs of work package 3. However, the methods of work package three are included as it is hoped this aspect of the research will be completed in the future.

Work package 1: Contextualising and understanding the socio-economic and technical-institutional dimensions of non-payment for water services in eThekwini Municipality and South Africa.

This work package was initiated first and it informed the inventions developed as part of work package two. It included the following activities.

1. Four literature reviews were produced to guide and inform the analysis of the study. Literature Review 1 was produced on non-payment for water services globally and in South Africa, to contextualise the study in relation to water governance. A review on Constitutional rights to water and legal perspectives on payment for services was included in the second literature review. The third literature review included the contextualisation of payment for water services in South Africa. The fourth literature review focused on supporting payment for water services, learning from diverse contexts, which was used to guide the development of interventions for the study.
2. Interviews with 15 experts in the water sector were conducted to examine the risks and challenges of non-payment for water and to gain their insights on the funding model in South Africa.
3. The particular histories and geographies that contribute to non-payment for water in eThekwini Municipality were documented by undertaking a review of reports and grey literature (secondary data) on payment for services in traditional authority areas; townships, state subsidized low-income housing projects. This has been done to understand and map the forms of governing water (state-citizen relationships) that have led to the culture of non-payment for water in different contexts across eThekwini Municipality.

4. A position paper was produced on non-payment for water, which includes the legal, socio-economic and technical-institutional dimensions. The position paper has been updated throughout the life of the project and has been reworked into the form of a journal paper, which has been submitted to a South African journal and which is under review.
5. Household surveys were undertaken in 105 households across four settlement typologies to understand citizens understanding of payment for water services, their practices of payment for water services and their understanding of the value and cost of water.
6. Meetings and learning labs with municipal officials to understand the challenges they face and the failures and successes of eThekwini Municipality as it has attempted to ensure payment for services across the city.

Work package 1 was initiated during the COVID-19 pandemic in 2020/2021, and this impacted on research protocols and the ability of the research team to collect data.

Work package 2: Develop and test (monitor and evaluate) pilot socio-economic and technical-institutional interventions in three settlement areas (traditional authority, township and low-cost housing project) within eThekwini Municipality to support improved payment for water services.

A city-wide household survey was undertaken in 500 households in August 2023 to understand citizens relationship with water and water services and to determine their response to the treatment of wastewater, which was part of another study funded by the Swedish Research Council led by Umea University. The surveys were undertaken in suburbs, townships, low cost housing projects, informal settlements and peri-urban areas. The survey results were used to inform the interventions designed for EWS to improve payment for water services.

Three interventions were designed in discussion with officials from EWS to be implemented in Mzinyathi, in the rural periphery in Durban. The interventions were developed through engagement between community leaders and civil society organisations, city officials and researchers in three research sites.

The possible socio-economic and technical-institutional interventions that were considered included:

- Social learning processes through dialogue, co-engagement and learning labs, to lead to a change in perceptions and attitudes towards payment for services both from the point of view of communities and the municipality.
- Inclusion of traditional leadership in co-production of interventions to encourage payment for services.
- Prepaid metering to rural households in traditional authority areas or townships
- Flat Rate – area based depending on consumption and lifestyles
- On-site billing and cellphone banking in outer lying areas which are furthest away from Sizakala payment centres (ease of payment)
- Local youth employment and community generated entrepreneurial solutions around payment for water services co-produced through engagement with youth groups across three case study sites.
- Planning ahead to propose cadastralized rural land parcels to avoid un-regulated densification and expensive delivery of infrastructure which include smart city ideas about management and payment of services

- Possible creation of Community Water Associations which are self-funded and sustainable in particular sites including traditional authority areas (deep rural areas).
- Fixing of broken meters to ensure good monitoring of water use and accurate production of bills.

The interventions were presented to eThekwini Water and Sanitation Unit in two learning labs for their input and consideration. The municipality was not able to implement these interventions due to a lack of capacity as a result of the 2022 floods.

Communication materials are being developed, drawing on the social learning of the project, that will be used in the future pilot socio-economic and technical-institutional interventions to support a shifting discourse towards payment for water services.

Work package 3: Monitoring and evaluation (This work package was not undertaken, but its proposed methods are presented for possible future projects).

1. Map and analyse state-citizen relationships around payment for water services in three different settlements drawing on data collected in Work Package 1 and 2.
2. Assess whether the pilot socio-economic and technical-institutional interventions are achieving their desired outcomes (change in social attitudes and behaviour, payment for services, reduction in conflict between the state and its citizens, functionality of technical interventions etc). This will be assessed using both social science and engineering/technical measures.

2.3 OUTPUTS

A final report has been produced for the study as well as a position paper which has been updated and produced in the form of a journal publication.

The results of the project were presented in a webinar on 12 November, 2024 entitled "*The socio-economic, technical and institutional dimensions of non-payment for water: solutions and lesson for South Africa*", with additional contributions from Mr Jay Bhagwan, Executive Manager: Water Use, Wastewater Resources and Sanitation Futures, Water Research Commission; Dr Nick Simpson, University of Cape Town who presented a paper: *Risk from responses to climate impacts on municipal water supplies: lessons from the Cape Town drought*; Simon Scruton, eThekwini Water and Sanitation Services, eThekwini Municipality who presented a paper: *Payment for water services: the municipal perspective*; and Professor Cathy Sutherland, WASH R&D Centre, University of KwaZulu-Natal, who presented a paper: *Conceptual and spatial mapping of payment for water services in eThekwini Municipal Area*. The webinar was well attended and it has been circulated widely. The results of the research for this project have been included in a paper submitted for publication in a South African journal (December 2024), with this paper under review.

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CHAPTER 3: RESULTS

3.1 INTRODUCTION

Palmer et al., (2017) in their book *Building a Capable State: Service Delivery in Post-Apartheid South Africa,* have addressed the challenging question of whether the post-apartheid state has been able to deliver rights-based services and sustainable development through the legislation, policy and practices of the three spheres of government, given that the provision of services is a public function. They conclude that the post-apartheid state has delivered on its promises, even with the significant impact of corruption and maladministration on its performance. “South Africa’s citizens, especially poor citizens, are substantially better off than they were in 1994. They have access to more and better services, and this access has brought a small but real decline in poverty. At the same time, however, the gap between rich and poor has widened, and the last 10 years has seen a significant weakening in state performance” (Piper, 2019, p 1). In terms of the provision of water services, this argument is supported by empirical data collected in the eThekwini Municipal Area, where the majority of residents have good to fair access to water, although this has become less reliable since 2019. However, other authors have argued that the post-apartheid funding model for water services is inherently flawed, and this is contributing to increasing inequality, poor provision of services and a failed local state, who cannot deliver water services to all in equitable and sustainable ways (Lebek, 2021; Ndlovu, 2021; Oskam, 2021; Scheba, 2021; Ledger and Rampedi, 2020; Cirolia and Robbins, 2019). According to Ledger and Rampedi (2020, p 1), after 30 years of democracy “it is clear that in many respects local government has failed to meet expectations – to be at the forefront of delivering transformative service delivery to all South Africans, and to contribute directly to meaningful and sustainable improvements in the standard of living. Many municipalities are in a state of financial distress, and universal access to affordable, quality services has not materialised”. Given the different perspectives on post-apartheid service delivery, and the questions this raises, it was necessary to reflect critically upon, and bring into dialogue, the different positions both academics and practitioners hold on water services delivery and payment for water services. Drawing on the knowledge and experience of citizens and state officials, and people’s everyday lived worlds and their response to and engagement with water services, this report has provided deeper insights into the provision of and payment for water services. This report used the case study of Durban to deepen the knowledge and understanding of non-payment for water services, and to contribute to debates on how to create a more equitable, sustainable and adaptable future for water service provision in South Africa.

3.2 CONCEPTUAL FRAMING OF PAYMENT FOR WATER SERVICES

Five main framings of payment for water services emerged through the research.

3.2.1 Governance, territory and state-citizen relationships

Payment for water services, as constructed by local government as part of its contract with citizens, and informed by national government legislation and policy, reflects the states' discourses, practices and control over service delivery, territory and citizens. It provides insight into how state citizen relationships are defined and mediated and it explains how water services are produced, funded and distributed to whom and on what terms. It reveals how state citizen relations and governance arrangements are crafted (how they are structured and operate) (Cirolia and Robbins, 2019) and by whom. Research on payment for water services from the perspective of citizens and the state in Durban, highlighted challenges in the current governance arrangements and state citizen relationships, and provides support for why officials in EWS have not been able to address the challenge of declining payment for water services since 2015, nor have been able to deliver on their part of this applied research project (WRC 2019/2020-00474: *The socio-economic, technical and institutional dimensions of non-payment for water: solutions and lessons for South Africa.*

Governance and the state-citizen relationships it produces, shapes the outcomes of payment for water services. It includes decisions on seeing water as a social and economic good, it defines transformation and pro-poor agendas and the commodification of water, and it shapes fiscal flows within local government and how the structure of payment for goods and services is constructed by city officials through transfers, grants and revenue from services provided. It also defines how the state and citizens interact with each other, through various forms of policy and instruments and social mobilisation, to negotiate the outcomes of how the costs of services are met in local authorities. Most importantly it highlights the level of trust that exists between state and citizens, and whose knowledge, discourses and practices define water service delivery in both urban and rural areas. As Sutherland et al., (2024), Simpson et al., (2019), Cirolia and Robbins (2019) and Sutherland et al., (2015) have shown, mundane and calculated responses by citizens can reshape the best-intentioned policies of the state in urban development and management.

This research therefore supports an approach to water service delivery and payment for water services, that is not only state led, but rather draws on the co-production of knowledge of multiple actors, to recraft a system that currently has inherent contradictions and is increasingly becoming challenging for the local state to deliver on, namely: the universal provision of services for all, aligned with constitutional rights, and the cost recovery required by local governments to fund water service provision, through payment for water services.

It is within governance arrangements that the politics of privilege also becomes evident, as some citizens in cities are able to exercise more power over breaks in service delivery, or in improved services, because they pay for services and are therefore critical to the revenue base of local government, who uses these payments to cross-subsidise services to the poor and free basic water. This creates a conundrum for the local state, as is seen in Cape Town and Durban, where water officials will ensure that services are prioritised and maintained to paying customers to ensure continued and stable payment. However, shocks to this model, in the case of Cape Town, the 2015 to 2018 drought, and in Durban, the rapid growth of the peri-urban periphery under dual governance, the social unrest and the 2019 and 2022 floods, have reconfigured the stable payment for water services (Sutherland et al., 2023; Cirolia and Robbins, 2021; Simpson et al., 2019).

3.2.2 Infrastructure provision (infrastructural geographies)

Infrastructure in water service provision includes physical built infrastructure which delivers water from catchments, with their streams, rivers and dams, through pipes, reservoirs, pump stations and taps to businesses, institutions and households; ecological infrastructure and ecosystem services which support and sustain the provision of water services; and the social or governance infrastructure, which includes the institutional arrangements and structures which determine water service provision (Lawhon, et al., 2023; Jewitt et al., 2020). Modernist, centralised infrastructure systems are dominant in the provision of water services both globally and in South Africa. Centralised systems deliver services universally, safely, with efficiency and at scale. They require investment in bulk infrastructure and the capture and provision of water resources regionally, which in South Africa is funded by national and provincial government and managed through state owned entities, as well as investment at the local level by local government for supply, distribution and maintenance. They are associated with significant costs for both the expansion of infrastructure and services and the maintenance of them. They can be unequal in the distribution of water services, particularly in cities and rural areas of the global south, given where the 'pipes' have been provided and where they go. They are also open to disruption as a result of climate, environmental, social and economic risks and shocks.

Citizens do not always understand the costs of providing potable water services through infrastructure and water purification systems, and tend to conceive water as a free resource that is provided by nature. They can source water locally, although this is not always safe nor easy, and so tend to prioritise payment for electricity over payment for water, in households where incomes are limited. The introduction of a flat rate for infrastructure, which was, for example introduced in the re-structuring of tariffs in Cape Town post the drought (2015-2018) has re-shaped citizens understanding of the costs of ensuring a reliable water service and in developing more alternatives for water supply. The impact of the drought emphasised the need for alternatives for water supply to the city's residents (Simpson, et al., 2019). To date, there has been resistance to introducing a flat rate for water in Durban, as residents in the periphery of the city, where the flat rate is being considered, indicate that they do not have a reliable supply of water and have to rely on water tankers, and so do not wish to pay an infrastructural levy until there are guaranteed of a stable supply of water. In African countries, there is a strong culture of payment for water services, where the emphasis is on payment for the service, or the infrastructure to get the water there, rather than on the payment for water itself (Sutherland et al., 2023).

Globally modernist, centralised systems are under pressure as they are aging, not always able to meet the demand for services, are facing disruptions due to financial and climate risk and are too large to adapt easily to changes in the water and social system. They tend to be uniform and universal, large and networked, they are governed and managed by technical experts, they are not visible to users, except in the global south where their failures are more apparent (for example load shedding, or wastewater treatment failure after the floods in Durban), they are linear and they remain iconic as they are considered to be the safest, most efficient and affordable way to provide services (Lawhon et al., 2023; Satterthwaite et al., 2019). However, there are increasing calls globally to consider a diversification and greening of service provision infrastructure to unlock the path dependency on traditional, large scale systems, and to create more sustainable alternatives.

The diversification of service provision is already evident in the energy and sanitation sectors in South Africa as centralised, modernist systems are no longer able to meet the needs of citizens, placing pressure on already stretched local authorities. The introduction of off-grid technologies, the development of governance partnerships between the state, civil society, research institutions and the private sector, through urban reform coalitions (Sutherland et al, 2024, Sutherland, 2023; Mitlin, 2023), the increasing emphasis on the co-production of knowledge around service delivery (Sutherland et al, 2021a, 2021b) and investment in ecological infrastructure in Durban (Martel et al., 2022; Jewitt et al, 2020), is beginning to reshape governance arrangements and diversify what service delivery means and looks like in a city facing multiple challenges.

The social infrastructure of governance in the water sector reveals an urban dominance in the design of local government institutions, policies and programmes which has reproduced the dominance of cities and has impacted on development and water service provision in rural areas (Piper, 2019). Palmer et al., (2017) provide an excellent overview of local government institutional arrangements and fiscal models of WSAs. Through these social infrastructural arrangements, the water sector has performed well, increasing water access at a basic level to 86% of the population by 2017. However, the ongoing expansion of water service provision, the continued under-provision in the rural areas where rural district municipalities are WSAs, and the capacity of the sector to keep infrastructure functioning properly, is of considerable concern. Research on the social and governance infrastructure for water service provision in South Africa reveals considerable challenges to universal service provision (Lebek, 2021; Ndlovu, 2021; Oskam, 2021; Scheba, 2021; Ledger and Rampedi, 2020; Cirolia and Robbins, 2019).

3.2.3 Financial flows in cities (fiscal geographies)

Analysing the role of finance in shaping urban and rural development, including the emerging work on fiscal geographies, or how finance flows through urban and rural spaces, is central to understanding service provision and the payment for water services. The complex social and financial relations between international finance, state actors, the private sector and citizens, shapes government policy and practice and the territories over which they govern (Making Africa Urban, 2024; Ashton, 2020; Cirolia and Robbins, 2019).

The fiscal spaces of government, while focused on the geographies of the state at the national and supranational level, and on how funds transfer and flow between multi- and trans-national actors (including donors) and national governments, and between national and local government, also require analysis at the urban and rural scale (Cirolia and Robbins 2019). Finance and state formation for water service provision at the local scale, creates a complex nexus of relationships between international donors, national governments, state owned entities, such as Umgeni Water, private sector actors, including consultants and citizens (Pike et al., 2019). By developing a deeper understanding of the financing and funding of water services, through the discourses, decisions and practices of national and local government, the challenge of the provision and payment for universal water services can be addressed. This will ensure a more sustainable future which shifts away from neo-liberal or capitalist urbanisation, but which ensures that the technical, financial, social and political dimensions of water service provision are included in fiscal, institutional, social and infrastructural models.

A deeper understanding of the fiscal framework and its implications is required in the South African case. Ledger and Rampedi (2020, p 1) amongst others (Lebek, 2021; Ndlovu, 2021; Oskam, 2021; Scheba, 2021; Cirolia and Robbins, 2019; Simpson, et al., 2019) argue that while

> "the post-1994 fiscal framework for local government was designed to ensure that there was sufficient revenue available to pay for the extended range of services and responsibilities that municipalities would have. The foundation of the framework was the assumed ability of municipalities to raise significant amounts of own revenue: The White Paper on Local Government assumed that 73 per cent of all operating expenditure requirements in local government could be funded through property rates and service charges"

Their research and that of others shows that local governments cannot generate this level of internal revenue from property rates and service charges, creating funding gaps which leads to greater inequality in water services provision, both within and outside urban areas.

3.2.4 Context of settlement (settlement geographies)

The research conducted for this study, adds an additional framing which has not been adequately considered in the literature, that of the importance of context, which is reflected in settlement geographies. While each urban or rural area has its own context, or histories and geographies, which need to be considered in the payment for water services, with ongoing questions as to whether rural and urban areas are useful categories of settlement under processes of extended urbanisation, so too do different settlements within each urban or rural area. This study has investigated payment for water services across a range of settlement typologies in Durban, which reflects its different governance arrangements, given that 43% of the municipal area is under dual governance and its high levels of informality, including both the traditional authority areas and informal settlements, which are home to a quarter of the city's population. This theoretical and empirical contribution is important as it speaks directly to questions of inequality, it is local, and it highlights the need for more diversified and perhaps context specific solutions to payment for water services across diverse settlement types. Durban has had a spatially differentiated model of service provision since 2000, EWS sought to provide a basic level of universal services across the municipal area, providing basic services in the peri-urban periphery where the infrastructure grids did not reach. Sutherland et al,. (2014) and Sim et al., (2016) provide an analysis of the emergence and outcomes of this approach.

3.2.5 Environmental and social risk (geographies of environmental and social risks)

The presence and spatial distribution of environmental and social risks, at the national, regional, local or neighbourhood scale, and the timing of the risk, has had a significant impact on the ability of local government in South Africa to meet its mandates for universal service delivery. Simpson et al. (2019) have shown how the drought in Cape Town has shifted the stability of self-generated revenue in the city, particularly as high-income residents go off the grid and lower their consumption of water services. In Durban, the impact of the COVID=19 pandemic and social unrest on employment, income and immigration, and the costs of the floods to the municipality, which has diverted human and financial resources towards disaster risk responses, has altered

the revenue streams of the city. It has also meant that officials, who have clear directives to address the issue of non-payment of services from Treasury, are not able to so, due to a lack of capacity (human resources and time), and the complexity of the issues that need to be addressed in a city that has faced four major disruptions since 2019.

The empirical research focused on obtaining an understanding of the debates and different positions that government (through legislation, policy and practice) and water specialists, activities and academics hold on payment for water services, given that water is a constitutional right in South Africa and a basic need. It identified the legislation, policy and practice that guides payment for water services, with particular reference to Durban. It included research on residents' response to water services and payment for water services across Durban, using different settlement types as an organising device to reflect on how context influences payment for water services.

3.3 POLICY AND PRACTICES OF PAYMENT FOR WATER SERVICES IN DURBAN

The relationship between eThekwini Municipality and its citizens (framed as customers by the municipality) who receive water services is set out in the eThekwini Water and Sanitation Service Level Standards document (EWS, 2024/2025). The vision and mission of eThekwini Water and Sanitation is provided in Figure 3-1.

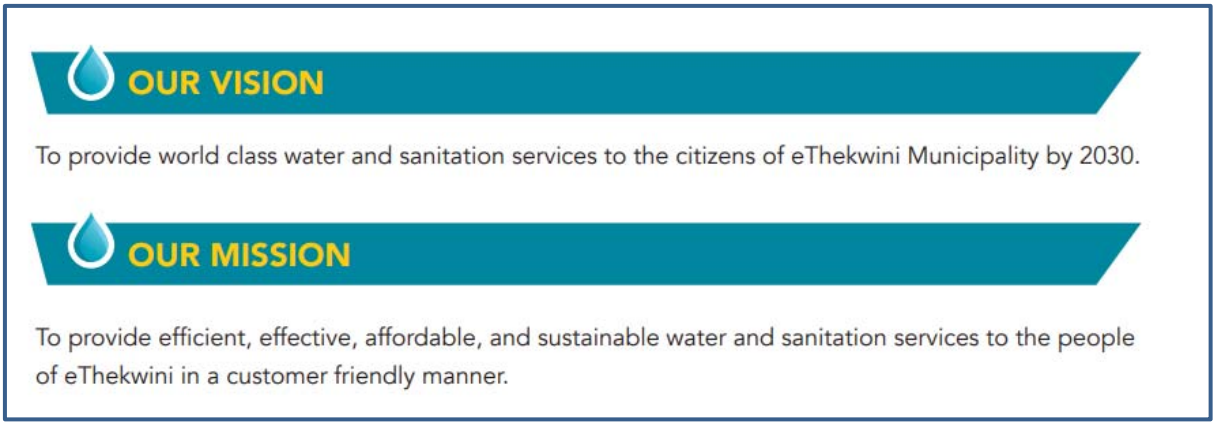

Figure 3-1: The Vision and Mission of eThekwini Water and Sanitation

EWS's Service Level Standards aim to ensure public expectations of service delivery are matched by achievable and measurable performance standards. The Standards document ensures that

- the relationship that exists between the service provider, EWS, and the customer or recipient of service, is enhanced
- areas of dissatisfaction are reduced
- in instances of disputes, the processes to resolve disputes are clear
- unrealistic expectations are eliminated
- the escalation procedures in the event there are differences between the service provider and customers are explained

- members of the public are made aware of how they can access the eThekwini Water and Sanitation Unit

These commitments reflect that EWS have a customer focused approach which is established, negotiated and managed through a clear set of guidelines and processes. The critical point is that the Municipality sees its citizens as customers, which establishes a particular set of state citizen relationships around service provision, namely a market orientated approach.

The standards charter acknowledges that the provision of water services is not equal across all areas or households in the city, as a result of the need to provide a basic level of universal services within infrastructural, capacity, spatial and backlog constraints, the pressure on the city to provide equitable service provision through a fiscal model which makes this challenging, increasing informality and population growth, the disruptions to the city which have impacted on development and the upgrading of service provision.

The Municipality provides different levels of service in terms of water provision to domestic customers as follows:

1. Full pressure water supply fed directly to the household from the City's supply network
2. Semi pressure supply received by the household via a roof-tank
3. 200 litres of water per household per day available via an individual household supply or metered flow Limiter connected to a yard tap
4. Standpipes/water dispensers that are provided to supply informal communities as an interim measure
5. Water sachets or tankered water in the case of prolonged service interruptions
6. Water boreholes where there is no water reticulation

The municipality states that full pressure domestic customers living in households with a value below R350 000.00 and all semi-pressure domestic customers, which includes residents in the peri-urban periphery who have access to water through ground tanks, receive the first 6 000 l of water free of charge. Those whose properties that have a value of between R350 000.00 and R600 000.00 can motivate to obtain free basic water based on need. The value of property has increased since 2022/2023 as it was set at under R250 000.00, which shows a widening of the band of residents who can obtain free basic water, even within the context of a municipality facing fiscal constraints. Rising block tariffs are applicable with customers receiving a Semi-Pressure supply having certain reduced rates. All water supplied via standpipes or via a relevant flow limiter connected to a yard tap is provided free of charge. This applied mainly to water provided in informal settlements. All properties in non-Cadastral areas that do not appear in the valuation roll, with total floor area of less than 50 m^2 are deemed to be valued at less than R350 000.00 to qualify for the free water mentioned above. Indigent families living in higher value houses may apply to gain access to free basic water.

eThekwini Municipality, as with other municipalities across South Africa, obtains funding for its large-scale water infrastructure through transfers and conditional grants. It funds the provision of water services and free basic water through the Equitable Share grant and through revenue generated by payment for water services. The eThekwini Municipality's Development Charges Policy 2023/2024 provides a framework for the external engineering services for which development charges are payable and sets out the calculation method of the development charges payable by a developer to the Municipality. It also intends to provide a framework on

equitability and sustainability for financing capital infrastructure assets. This policy guides the payment for infrastructural development, including bulk engineering services for water.

The Municipality is entitled in terms of section 229 of the Constitution of the Republic of South Africa, 1996, to impose rates on property and surcharges on fees for services provided by or on its behalf within its area of jurisdiction. The rules and processes which guide the relationship between eThekwini Municipality and its customers, with regard to payment of monies for services rendered, are contained in a municipal by-law: Municipal Notice 108 of 2017; Local Government: Municipal Systems Act (32/2000), Credit Control and Debt Collection By-law, 2017. eThekwini Municipality has tariffs which define the payments required to connect to and obtain water services. eThekwini Water and Sanitation Unit has connection tariffs, which include connection to the network (both full pressure and semi-pressure), a water deposit, free basic water (as described above) and rising block tariffs for water consumed above 6 000 l.

3.4 PAYMENT FOR WATER SERVICES ACROSS DIFFERENT SETTLEMENT TYPES IN DURBAN

The response of residents to water services and payment for water services has been assessed at both the settlement and city scale in Durban.

3.4.1 City Scale

Research conducted by the WASH R&D Centre as part of a project funded by the Swedish Research Council (Grant number 2018-03476) led by Umea University, on wastewater re-use in Durban in 2023 included questions on water use and on payment for water services. This data was drawn from a representative sample of settlements across the municipality and hence provides good insights into water perceptions and payment practices.

Residents were asked a range of questions related to their conceptions of and use of water in the city (Figure 3-2). Durban residents are very aware of water scarcity. Communities are very aware of the impacts of climate change and droughts on water availability (62%) and perceive the city to be a water scarce city. The majority of residents (77%) are very concerned about degradation of the environment and its impact on the provision of water and water scarcity. They state that water is scarce in the city (and in their households) due to a lack of provision of services (79%).

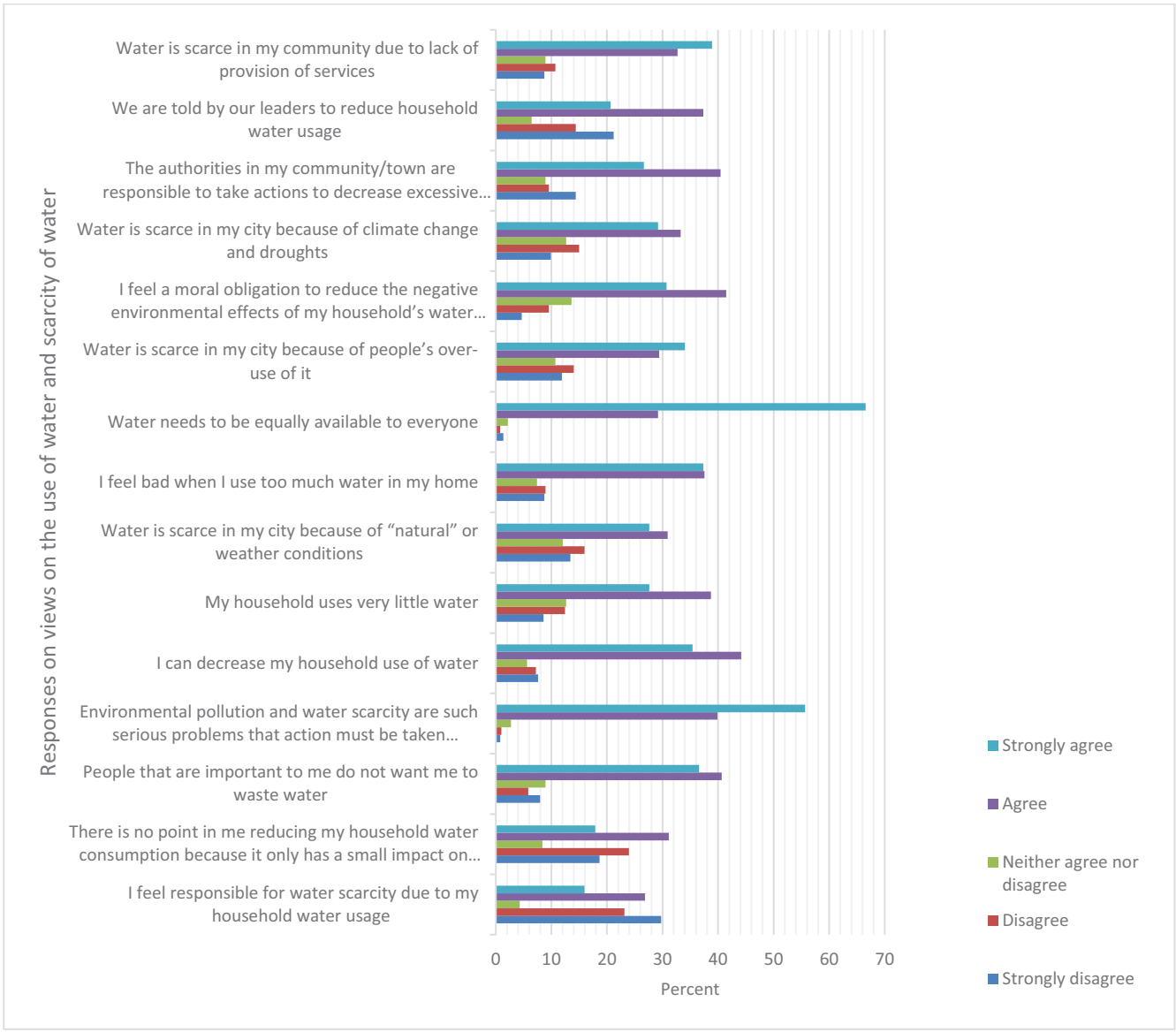

Figure 3-2: Durban residents' views on the production and use of water

A lower percentage of residents (58%), state that water is scarce in the city due to natural or weather conditions. They therefore recognize both the natural and governance/infrastructural constraints on water service provision, but emphasise that the techno-managerial conditions in the city, in other words the provision of water services by the municipality is the biggest drive of water shortages in households. Residents feel that people waste water and over use it (63%), but that they are told by city leadership to save water (68%), and they believe it is the responsibility of the local authority (67%) to ensure that people use water wisely. They feel a moral obligation to reduce their use of water as they understand it is a limited and scarce resource (72%) and 74% of residents stated that they feel bad and concerned when they waste or over-use water in their homes. Household members feel that they can reduce their consumption of water, with 79% of residents stating that they can decrease their use of water. It is interesting that residents have a strong and clear understanding of water scarcity in the city, they are concerned about it and they state that they can reduce their use of water, all of which is positive in relation to the provision of water services in the city from a

sustainability perspective, but as Simpson et al., (2019) caution, changes in demand can impact on the financial sustainability of the water provision system. Within the data set, the majority of household's state that they already use very little water (66%), so further work through additional data analysis, collaborative engagement (as suggested in the recommendations of this report) and research will help to understand collectively where improvements and gains can be made in the provision of water services within the municipality. Household members are influenced by others around them in terms of their use of water (77%).

However, residents are less convinced that by reducing water consumption in their household's water scarcity or availability in the city will change, which is most likely connected to their belief that water scarcity is related more to the techno-managerial aspects of water than natural scarcity. The connection between consumption and the ability of the state to provide water therefore needs to be explained clearly to residents. However, this needs to be balanced with the fiscal strategies of how revenue is generated. A cost-benefit analysis of these relations between elements of the water system would be good to undertake in collaboration with residents, as part of the education of residents and also as part of the municipal strategy. While residents state that they feel concerned about water scarcity and feel morally obliged to address this, stating that they could lower their water consumption, they do not feel responsible for water scarcity in the city as they believe the main challenge is the techno-managerial aspects of water provision, which they believe is the responsibility of government.

Residents of eThekwini Municipality strongly believe that water should be available to all in the city (95%). The data shows that the majority of residents do not believe that water is equally accessible to all in South Africa and in Durban (Figure 3-3). Water inequality in considered to be less severe in Durban than in the rest of the country, which is a positive outcome for the municipality. Just over half of residents, 51%, state that water accessibility is unequal in Durban, which reflects their understanding and experience of Durban's spatially differentiated services provision model, the inequality in the city as a whole, and the way in which water services are delivered and distributed universally across the city.

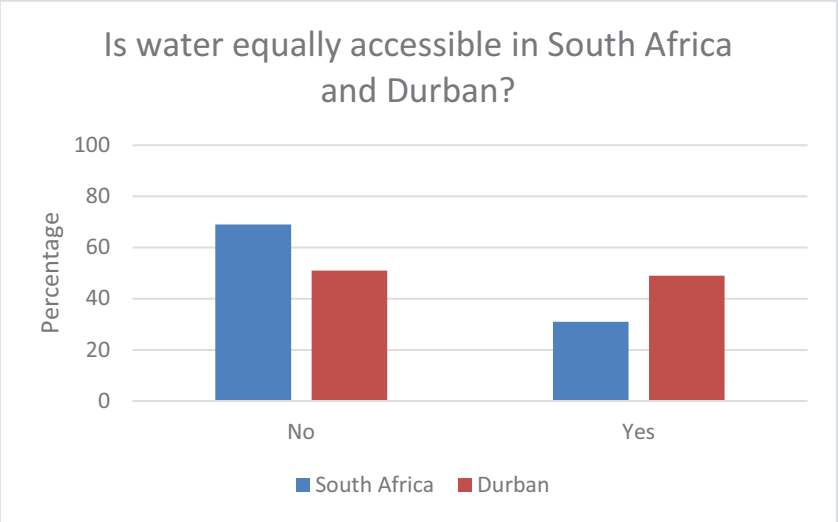

Figure 3-3: Water accessibility in South Africa

Residents were asked what the reasons are for the unequal access to water in South Africa (Figure 3-4). Infrastructure provision and techno-managerial aspects were raised as the main reasons why water is not equally accessible across the city and South Africa. These aspects were considered to be worse across South Africa than in Durban. The poor maintenance of infrastructure was also raised as an issue in Durban as well as natural scarcity affordability, wastage and corruption. It is clear that most citizens blame poor service provision by government for inequality in water access in the country and the city.

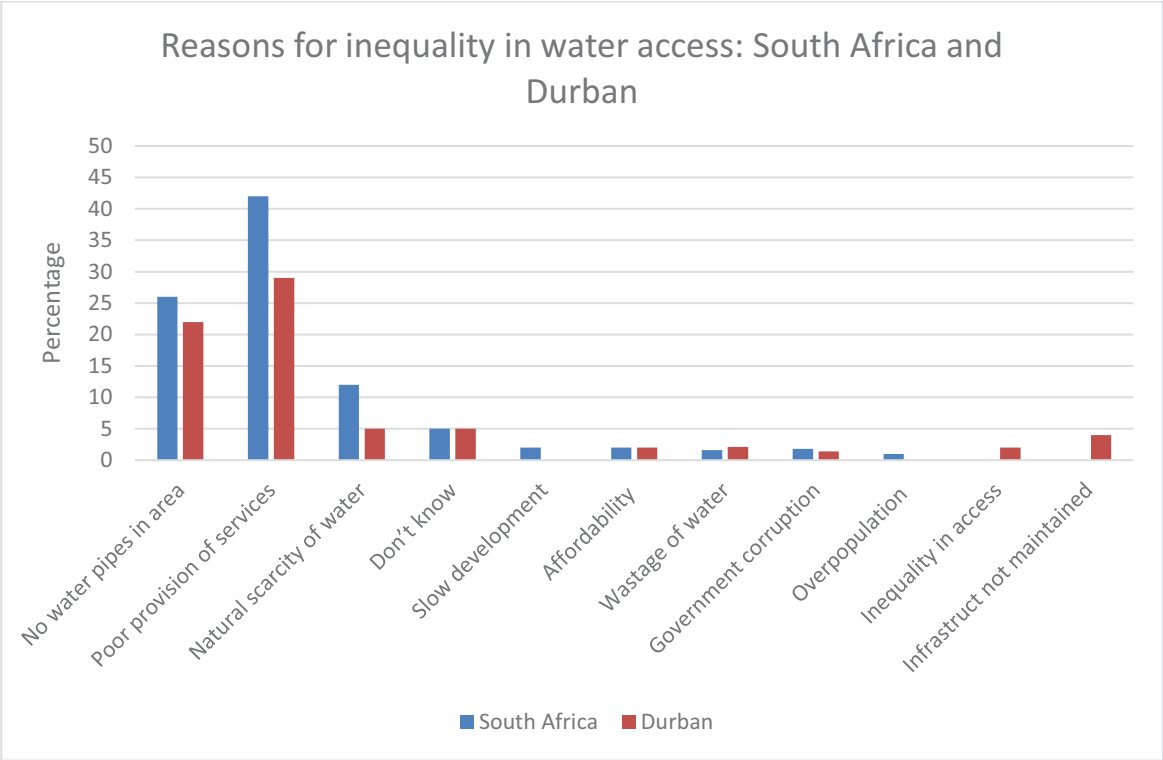

Figure 3-4 Reasons for unequal access to water

The data shows that 44,6% of residents in the city are not paying for water. For those that do, the cost of water varies between R100.00 and R800.00 in month. This data is in contrast to the data collected from the upper income household survey, where some households reported paying up to R4 500.00 per month for water (Figure 3-5).

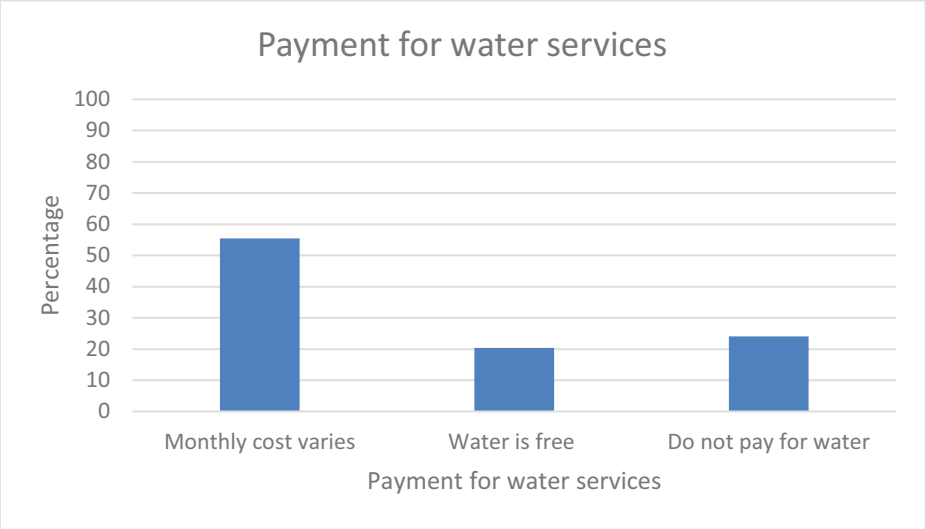

Figure 3-5 Payment for water services in eThekwini Municipality

The results on how much people pay for water per month varies with almost a decile of residents paying in each R50.00 category between R100.00 and R800.00 showing a relatively even distribution (Table 3-1 and Figure 3-6). The income distribution of residents is more variable, showing a clustering within different income groups. Further analysis on this data to assess payment for water services and income needs to be undertaken and will be completed as the research team continues to engage with the municipality in the second phase of this project.

Table 3-1: Monthly costs for water services

Monthly cost	Percentage of respondents
No cost/do not pay for water	44,6
R100 – R150	10
R151 – R200	9,2
R200 - R250	4,3
R251 – R300	6,8
R301 – R400	11,4
R401 – R500	9,2
R501 – R600	3,5
R601 – R800	1

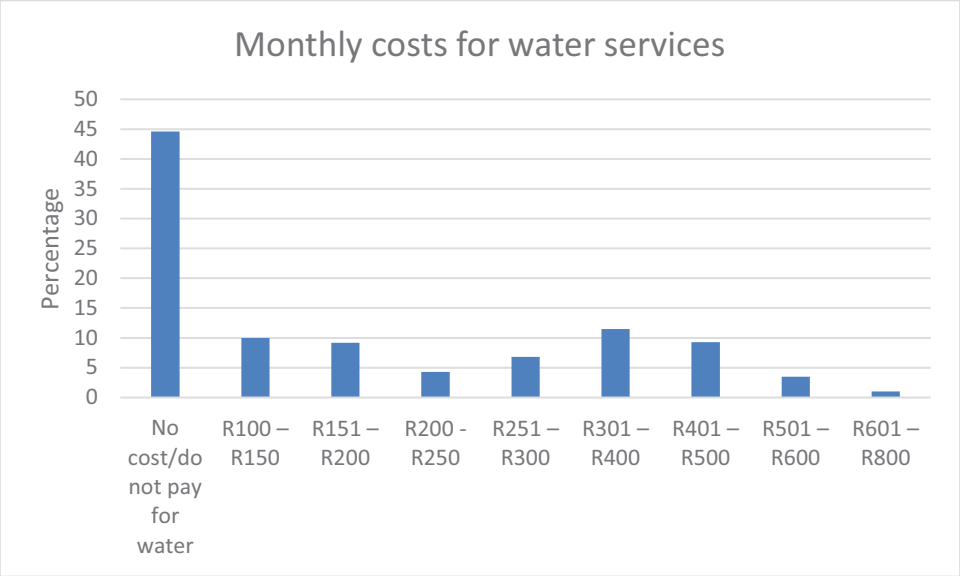

Figure 3-6: Monthly costs for water services

This data is in contrast to data from the household surveys where it is evident that middle to upper income neighbourhoods pay much higher monthly amounts for water services than reflected in this data.

The demographics of household members who participated in the 500 surveys conducted across the city have a good gender, age and income distribution (Figure 3-7 and Figure 3-8).

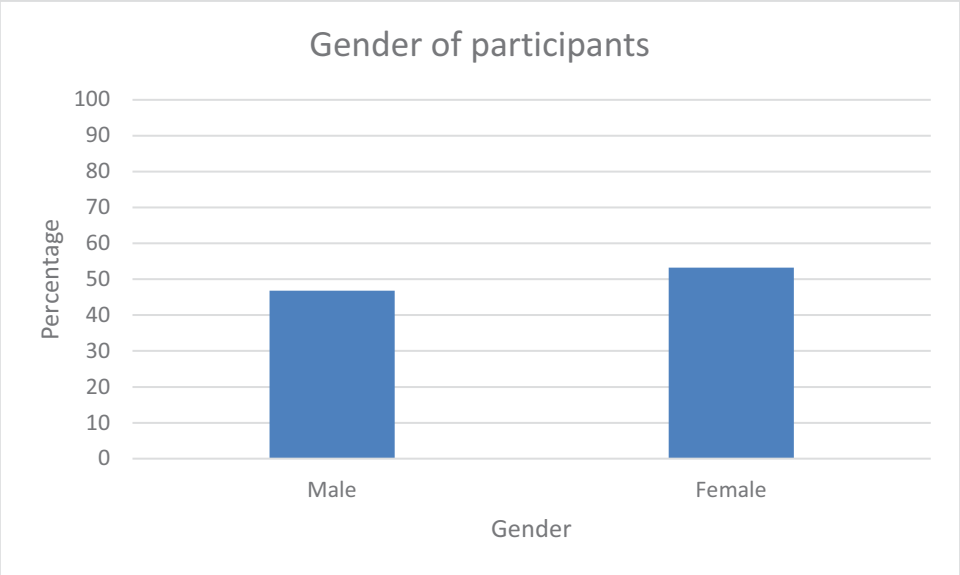

Figure 3-7: Gender of participants

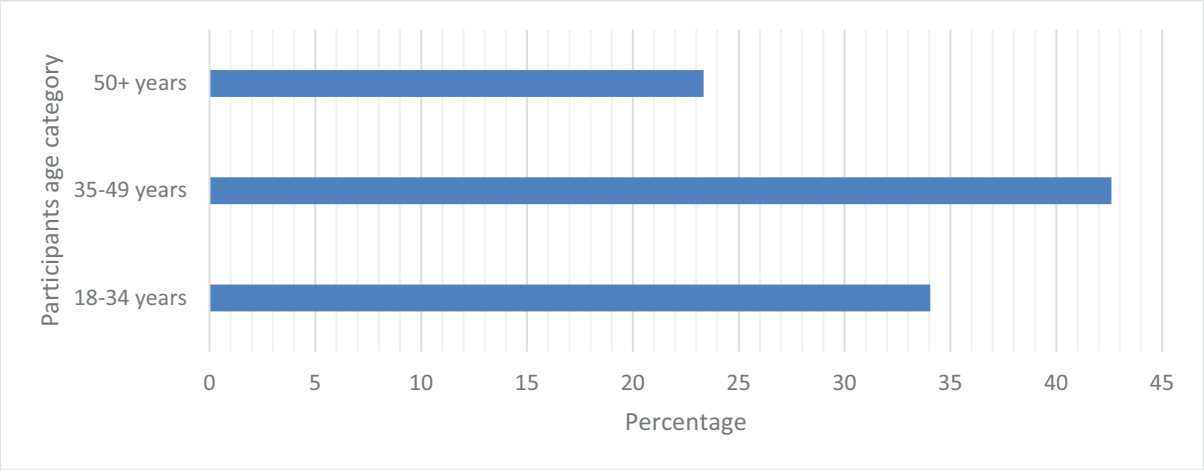

Figure 3-8: Age of participants

Results on the employment of respondents reflect the precarity of employment in the municipality, with 27,5% of respondents stating they are currently unemployed. It is evident that the private sector (24,9%), self-employment (15,4%) and the public sector (10,7%) absorb the labour force in the city, with respondents also engaged in informal sector activities (Figure 3-9).

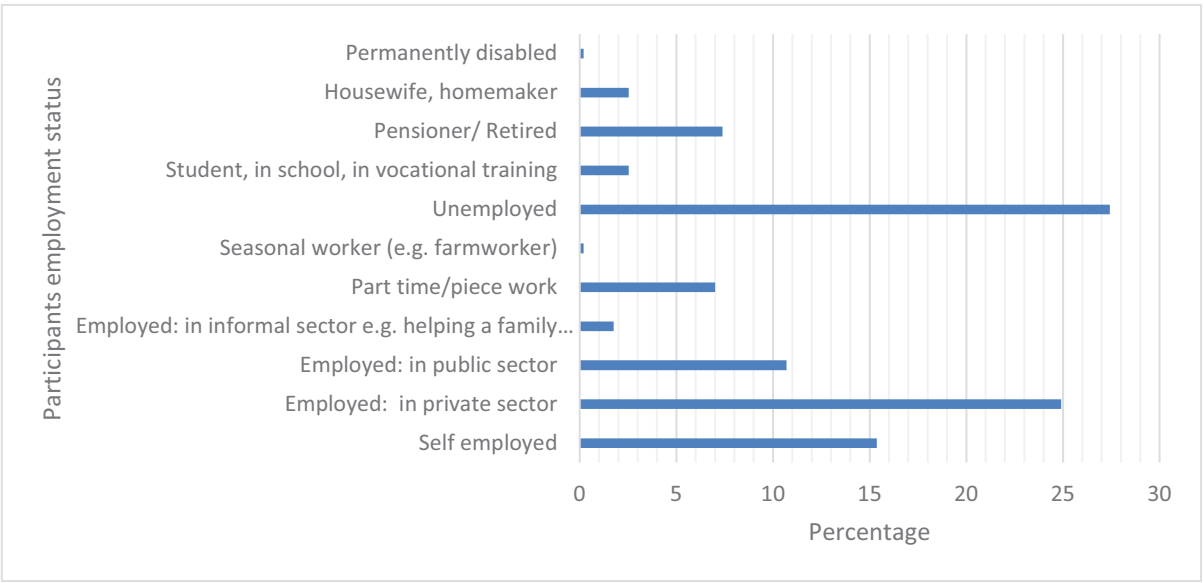

Figure 3-9: Employment status of participants

The income distribution of residents in eThekwini Municipality provides insight into the ability of households to pay for services. This question referred to the respondent's income and so does not reflect the household income. The data shows that almost one third of respondents (30,5%) earn between R1 and R4 999 per month, 18,5% earn between R5000 and R9999 per month, 17,1% earn between R10 000 and R19999 per month, and 20% earn over R20000 per month (Figure 3-10).

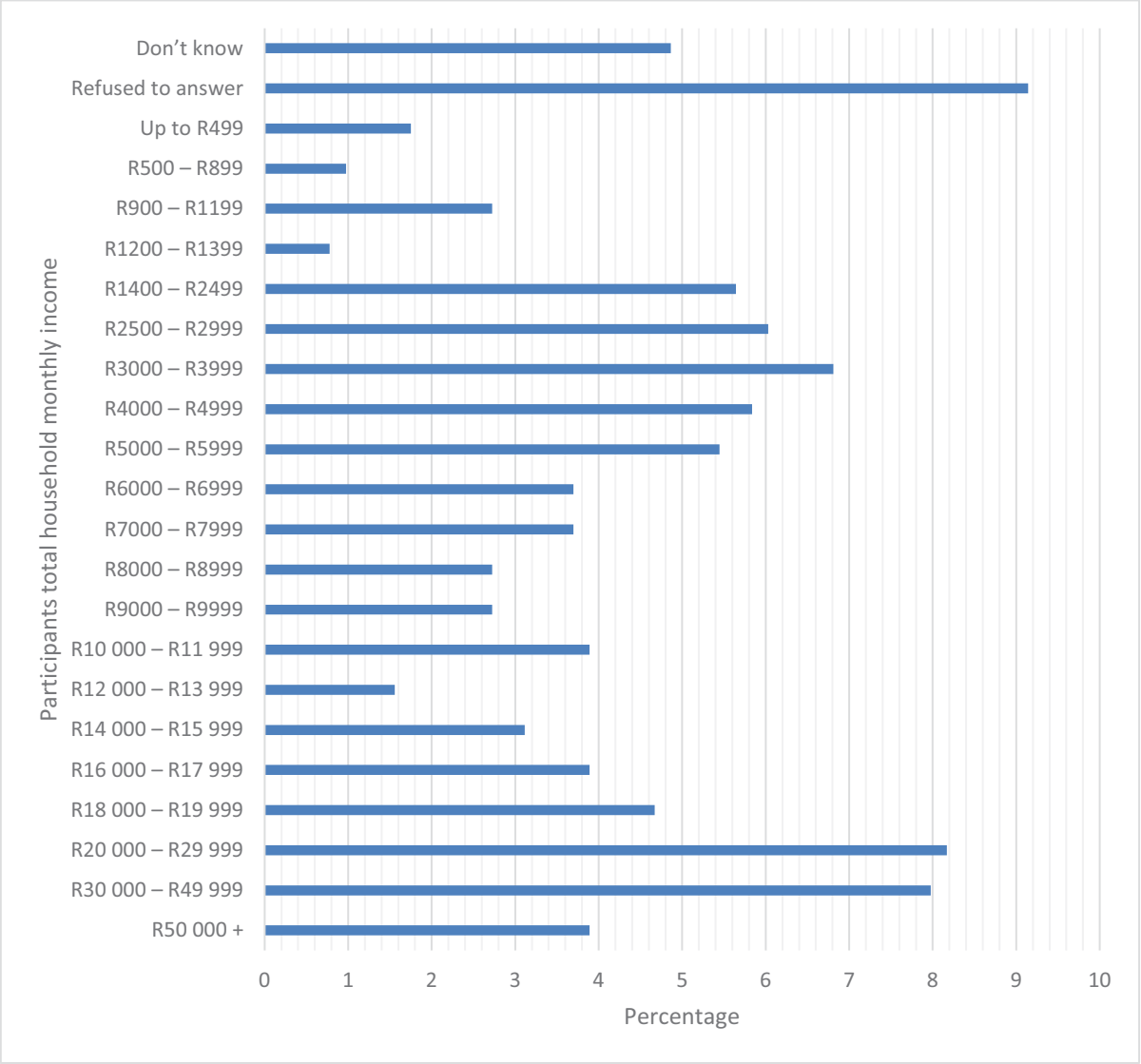

Figure 3-10: Income of residents in eThekwini Municipal Area

What is important is the impact of shocks on income and the way in which these may influence citizen's ability to pay. Residents were asked if the COVID-19 pandemic impacted on their income, with 45,5% reporting that it did not change, 9,5% stating their income increased, and 49,5% stating that their income decreased. The social unrest in 2021 and the two major floods may also have had an impact on income for some residents (Figure 3-11).

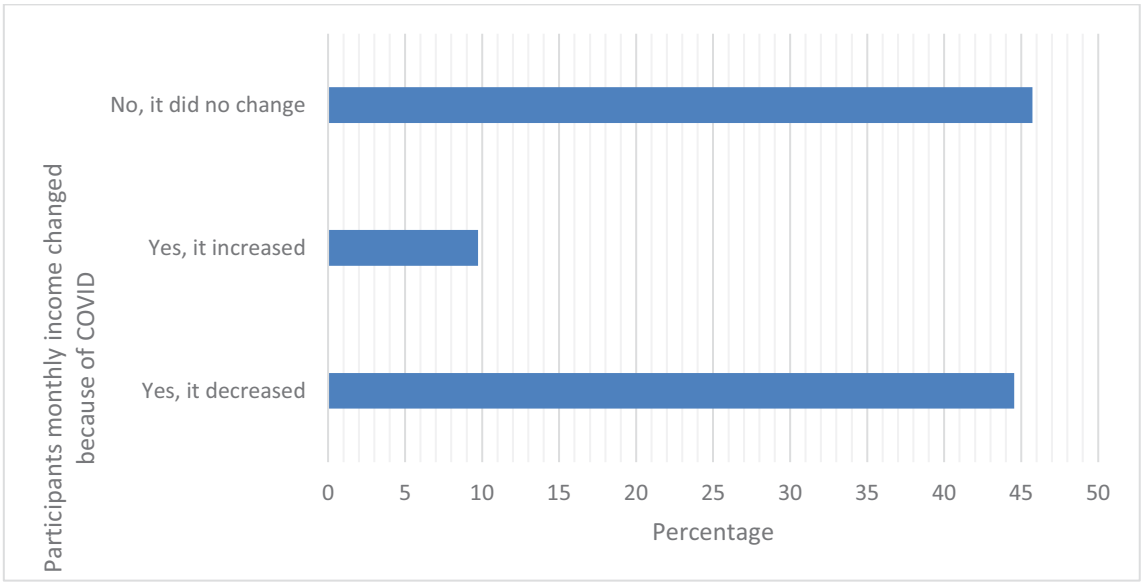

Figure 3-11: The impact of the COVID-19 pandemic on income

These impacts were variable with some respondents, with 17%, losing more than a third of their income, which is a significant impact on disposable income. More than a fifth of respondents lost at least one fifth of their income Figure 3-11).

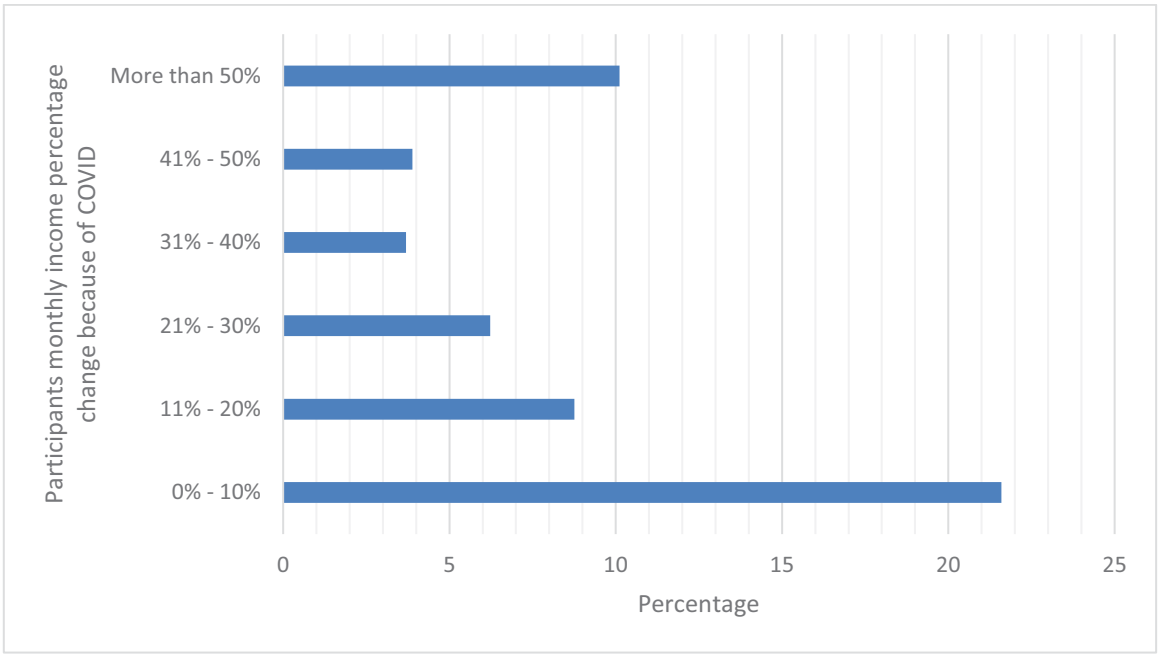

Figure 3-12: The level of impact of the COVID-19 pandemic on income

The municipality provided a debt relief programme over the COVID-19 pandemic period, which was extended twice and was concluded in 2021. At the time Peet du Plessis, Head of Revenue Management at eThekwini said: “As a caring City we decided to extend the programme so that more customers are able to benefit as well as reduce their debt considerably. We encourage customers to take full advantage of this option as no interest charges will be raised to their account.”

Data on the number of children in households is useful as it reflects in part the dependency ratio, and it highlights the need to provide enough free basic water to meet the needs of larger households, given Durban's demographic structure which predominantly made up of people who are under 35 years of age (Figure 3-13).

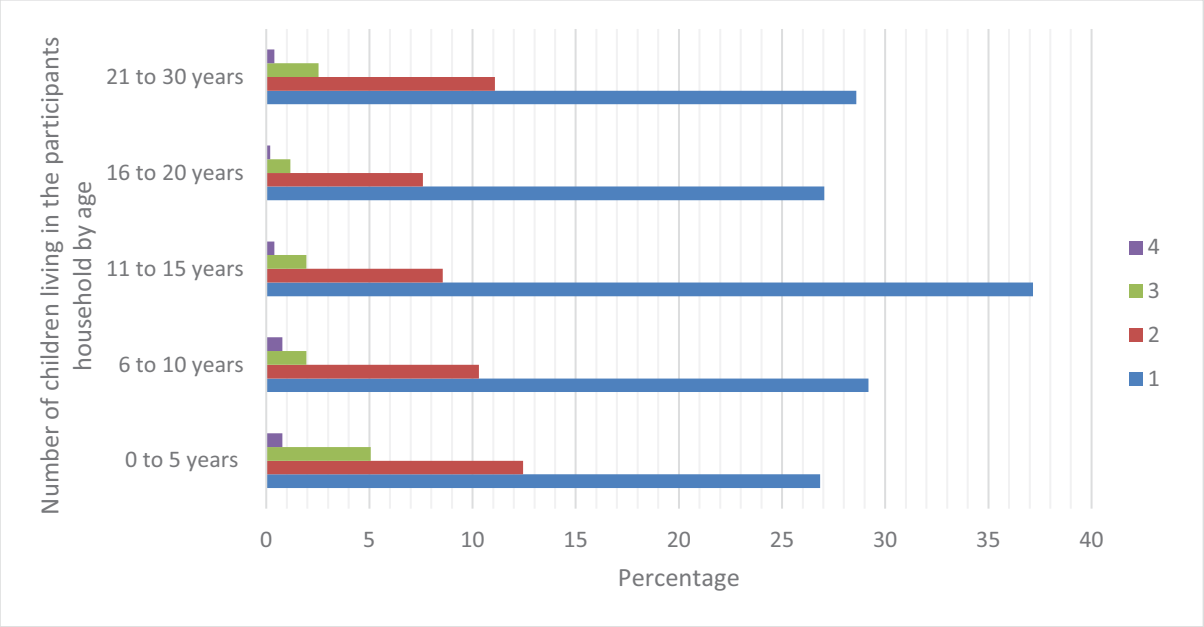

Figure 3-13: Number of children in households

3.4.2 Summary of results from household surveys conducted across four settlement types

This report presents a high-level summary of the data. Citizens of Durban are more likely to pay for electricity services than water, but that there are still relatively high levels of payment for water services in suburbs (100%), townships (77%) and low-cost housing projects (63%). There is low payment for water services in peri-urban areas (3%), which is largely due to the spatially differentiated service provision model, where free basic services are provided in peri-urban areas, through ground water tanks (Figure 3-14).

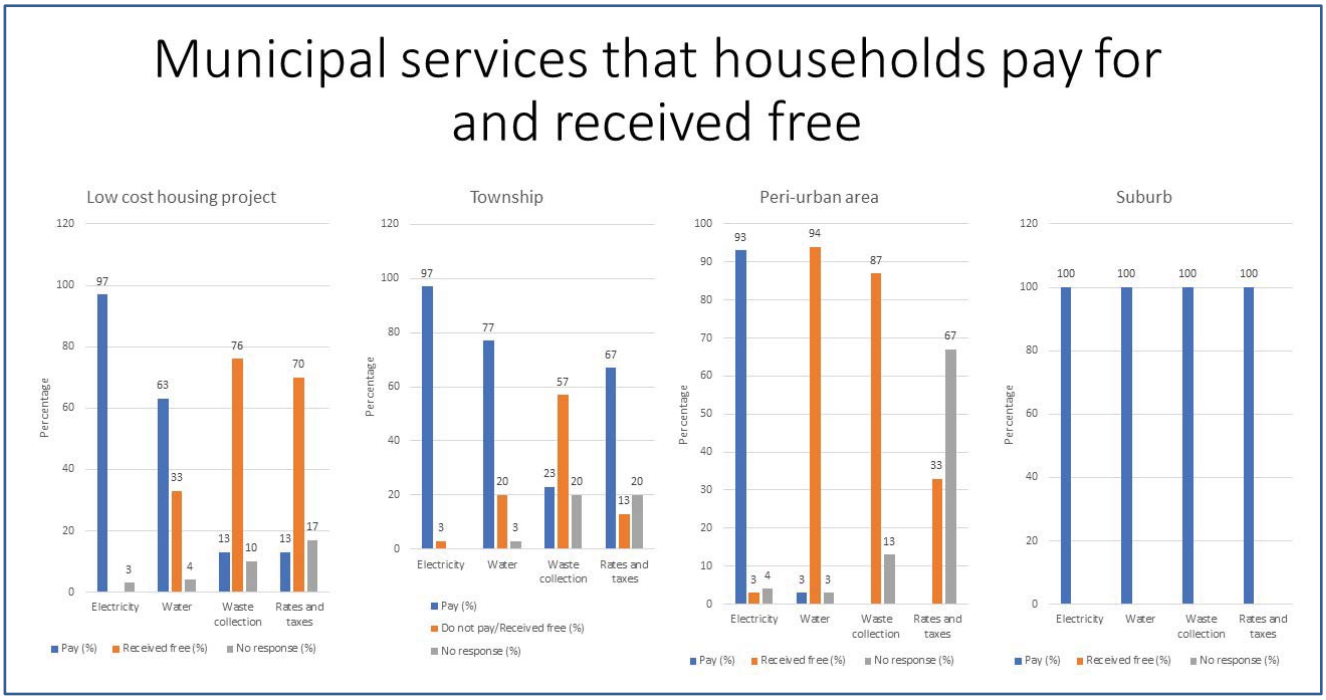

Figure 3-14: Payment for services across settlements

Figure 3-14 shows the variability in payment for services across settlement types. A culture of understanding water as being “free”, and not paying for water services has continued in peri-urban areas, even with rapid densification, suburbanisation and the provision of metered water services. This is due to the history of water provision in peri-urban areas, the perception of free basic services provided during the homeland policy in the apartheid era and on Ingonyama Trust Land (post 1994) governed by the traditional authority, and the poor level of service provision and lack of reliability of water services. Given that residents pay for electricity ahead of water, may be due to the perception that electricity has to be produced and provided, whereas water is perceived to be provided (i.e. limited production to obtain the resource). This study argues that the relationships between citizens and the state in areas under dual governance, and the social compact around payment for services, are a critical area to address and re-negotiate. Many middle and high income urban and rural residents are moving to these areas in the city, but are able to avoid paying for water services (Sim et al., 2016; Sim et al., 2019). A new approach to payment for water services is required in these rapidly developing areas.

Interviews with water sector specialists and municipal officials, as well as household surveys, revealed that the majority of stakeholders in South Africa support the right to basic water. Household members in townships, peri-urban and low-cost housing projects support an approach where the poor should not have to pay for water. Just under one third of respondents in the low-cost housing and peri-urban settlements (30%) stated that nobody should pay for water, and 40% in low cost housing projects and 20% in peri-urban areas stated that some people should pay for services. Township residents (43%) stated that some people should pay for water. In both township and suburban areas, 40% of residents stated that all people should pay for water, with 27% in low cost housing projects and 33% in peri-urban areas stating that all people should pay for water services.

This reveals a range of responses with 34% of all respondents stating that all people should pay for services, 37% stating that some should pay for services, 18% stating nobody should pay for services and 10% not responding. It is therefore evident that most respondents support some form of payment for services, and that this is qualified with the statement that the poor should receive support from the state. The main reasons provided by respondents for paying for services is that it costs money to provide water services (cleaning water and infrastructure) and people who can afford to pay for services must pay, to support the delivery of services. The reasons for people not paying for water include (i) affordability, as some cannot afford to pay for water and where this is the case, the state should provide free basic water, (ii) that services were provided before in informal settlements and so should not be charged for in low cost housing projects, and (iii) that water comes from the environment and nature and so should be free.

Water consumers in the suburbs of Durban, with high levels of payment for water services, supported the argument that those who could not afford to pay for water, should have water provided to them free by the state. The majority of suburban respondents (53%) stated that not all people should pay for water, as not everyone can afford water and water is a basic human right and is essential to life. One third of suburban respondents (33%) stated that only some people should pay for water, as water is a basic right, with 47% stating that the poor should be entitled to free basic water from the government, thereby recognising everyone's right to water.

South Africa's policy for free basic water, which is meant to ensure that all South Africans have access to at least a basic supply of water, has been implemented to support the right to water, although in many cases, this right is restricted in terms of the amount of water supplied and can be considered by more critical scholars as undermining the pro-poor agenda and transformation.

Water sector specialists and municipal officials agreed that water is a basic human right. They stated that the poor should get free basic water, but they disagreed on who qualifies as 'unable to pay'. As the price of food, unemployment and municipal tariffs rise, the number of people who are 'unable to pay' or who fall in arrears are increasing. Cross-subsidisation exacerbates this effect. Those interviewed also questioned how the poor are defined in terms of free basic water. Interviewees agreed that household income is an unreliable measure and people often under-estimate their income when asked to report on it. Indigent registers are also notoriously difficult to administer.

Water Specialist 1 advocated for a centralised system, based on South Africa Social Security Agency (SASSA) and StatsSA data to identify indigents. Water Specialist 2 was negative about the accuracy of government data, which would form the basis of such a centralised system. Property rates (less than R350 000.00) and house area (less than 50 square metres) are used in eThekwini Municipality as the most accurate indicators of poverty. Municipal officials argued that water is a service and that people should pay for a service they receive, and that without payment, the municipality cannot afford to deliver services, and so the provision of free basic water needs to be balanced with the need for municipalities to raise revenue for water services.

The ability of people to pay for water, the quantity they need and the ethics and purpose of free basic services should determine who should pay for water, according to water sector specialists and municipal officials. Respondents disagreed on the purpose of free basic services with three interviewees stating (although not all stated it explicitly) that free basic services should cover exactly what it says: basic services. On the other hand,

Water Specialist 1 believes that free basic services entrench poverty; the amount provided is not sufficient to lift people out of poverty, which should be the purpose of a developmental state. In their view, that is particularly the case for electricity. The free quantity should be increased so that people can study, start their own businesses, be healthy, and develop themselves.

Free basic water policy had unexpected behavioural results from both consumers and municipalities as follows:

- As there is no incentive to restrict free, unmetered water to 6 000 l per month, some poor households use more, putting strain on water resources (USAid, 2017:40).
- Poor households are also often larger than eight people; even within the limit of 25 l per person per day, such a household would exceed 6 000 l per month (Enqvist et al., 2020).
- In the KwaZulu-Natal province, middle class and wealthy consumers would move into areas under traditional government to avoid paying municipal tariffs (Tissington, second literature review).
- Municipalities would focus services and maintenance on areas with paying customers, neglecting areas that were not bringing in income. As a result, water services to poor communities deteriorated (Ledger, 2021; Cirolia and Robbins, 2019).

The results from the household survey support the argument that there is significant variation spatially, in terms of who receives free basic water, with households in peri-urban areas of Durban (94%), receiving a much higher share of free basic water, and households in low cost housing projects (33%) and townships (20%) receiving a much lower share. Where a person lives, and the history and geography of the area they live in, impacts their ability to obtain access to free basic water. Municipal officials from eThekwini Municipality highlighted the significant difference in payment for water services between urban and rural consumers in Durban, but acknowledged that urban and rural residents receive a very different level of service, which impacts on payment.

The response from households across the municipality supports the position that those who cannot afford to pay for services should receive free basic water from the state, with almost one third of those living in low cost housing projects and peri-urban areas stating that no-one should pay for water services. The responses of township and suburban residents is interesting as both township residents and suburban residents equally favour payment for water services by all. Suburban residents have the highest number of households stating that those who are poor should not pay for services, and suburban and township residents having the highest number of respondents (70%) stating that some or no people should pay for water services.

The reasons given for why people should not pay for water services are strongly aligned with the cost of water and affordability in low cost housing projects, townships and peri-urban areas, with suburban residents having the highest percentage who state that some people should not pay for water services, as it is a basic human right. Affordability is therefore the dominant reason as to why people should not pay for services, which is connected to water being a basic human right in a developmental and social welfare state such as South Africa.

This supports Yates and Harris's (2019, p 10) statement that ''South Africa is famed for its Constitutional recognition of the human right to water, yet critics have highlighted embedded inequalities and injustices, particularly as water continues to be governed as a commodity in many cities''. This results in the paradox that

water is a basic human right, but it is also a commodity (Hassan, 2001), and reconciling these two positions, is very challenging, as it becomes reduced to a question of affordability, if one wants to honour and meet the objectives of the two positions. But how does the state decide on what is affordable in terms of water service provision. Against what, is water affordability measured? Income and livelihoods, costs of food, costs of housing, costs of technology and access to a digital world, or costs of education and social enrichment?

Municipal officials raised the point that free basic water undermines both the quality of service provided and the response to a lower level of services. Residents feel that since they do not pay for water, they cannot demand a higher quality service and so are more likely to accept mediocre service provision. The state in turn, is providing a free basic service and so does not feel compelled to improve this service or maintain it, when they have other pressures and priorities, such as ensuring that high paying customers, receive a high-quality service and good support around maintenance issues. The data supports this proposition that payment for water services and quality of services provided are inextricably linked. EWS officials stated that free basic water raises challenges around consumption and water supply, as many households create illegal connections to free basic water supply systems, and these illegal connections then bypass the provision of 200 l a day or 6000 l per month. This leads to the so-called ‘stealing of water’ or ‘gaining access to water that is there’ depending on who is framing the activity, which increases the amount of non-revenue water in Durban.

A municipal official from EWS raised the point that many who can pay for basic services are hiding behind those who cannot pay. This is particularly true in low cost housing projects and traditional authority areas, where those who can afford to pay, access free basic water in areas that are known to suffer from poverty and equality, but which are home to residents who have high socio-economic gradients between them. This has been most evident over the past fifteen years, as both Ingonyama Trust land and low cost stated subsidised RDP houses are sold to middle- and upper-income residents through the ‘open secret’ (Municipal Official 4, 25/01/2022; Sim et al., 2018).

The costs of water limits household use of water in low cost housing projects (57%) and townships (37%), with some impact in the suburbs (20%) and the least impact of cost in peri-urban areas where the majority of households receive free basic water (13%). Water is considered to be expensive by the majority of household members interviewed in Durban, but it is not considered as expensive as electricity. Household members stated that they often prioritise electricity payments, as they are more likely to be cut off when they do not pay their electricity bills and that there is more of a buffer from the state, or room to manoeuvre, when they do not pay their water bills, as water is a basic human right.

The household survey reveals that residents in low-cost housing projects find water expensive or very expensive (57%), with just over a third not paying for water services (35%). The data shows that low-cost housing residents cannot afford to pay for services, with many unable to pay due to high debt and arrears, which in some cases they inherited by taking over the low-cost house from somebody else. Only 10% of residents stated that water is not expensive in the low-cost housing project. Township residents also feel that water is expensive or very expensive (53%), with 20% not paying for water services. One fifth of residents (20%) stated that water is not expensive.

In peri-urban areas, very few residents stated that water is expensive or very expensive (6%), as the majority do not pay for services (43%). In the suburbs, 47% of residents stated that water is not expensive, with 47%

stating that it is expensive or very expensive. The household surveys reveal the amount spent on services across eThekwini Municipality. It is evident that residents in the suburbs and townships are paying the most for water and hence are cross-subsidising residents in low cost housing projects and peri-urban areas. The lack of payment for water in peri-urban areas under traditional authority is evident, with township and low-cost housing residents paying on average R500 per month on water services, with some residents in townships paying as much as R1 500 to R2 000 per month (20% of residents) and residents of the suburbs paying on average R1 575, with some residents paying as much as R4 400 per month. These values differ significantly from the data collected in the city-wide survey, which may have under-represented the costs, given that the settlement typology household survey specifically focused on payment for water services.

The financial pressure on households who have not been able to pay their latest water bill is evident in low cost housing projects. Many residents stated that they could not pay their bills due to high debt on the bills, which makes them impossible to pay or clear, with many stating this debt had been passed on to them by someone else. A comparison of monthly costs and what households spend their income on shows that most household items of expenditure are in the range of R500, with households stating that the things that they cannot afford, but which they need, are electricity, groceries and clothes.

The household surveys show that the majority of residents in low cost housing projects (80%), townships (80%) and the suburbs (100%) have access to sufficient water which is of a good quality. Residents in peri-urban areas do not have access to enough water. This data can be compared to data on the availability of water, with water being available the majority of the time in suburbs and low-cost housing projects, with variable availability in townships, and many water outages in peri-urban areas. In the case of townships and peri-urban areas, the municipality limits the use of water, even when it is available, through flow limiters and other restrictions on water use. It also limits availability of water through its inability to provide water in townships and peri-urban areas.

This is evident in the household data collected for this study, where residents in the suburbs who receive a high quality of service, who pay for their services, and hence who form the focus of municipal efforts so as to ensure they continue paying, receive a good service, which is maintained well, with water leaks and broken pipes and connections fixed within two days. These residents also have a reasonable level of trust in the municipality. In comparison in low cost housing projects, townships and peri-urban areas, the quality of services is much lower, residents experience regular loss of water services, they pay less regularly for water services, and the response time to fix breakages in the system is much slower. As a result they have a poor service and they have less trust in the municipality. However, even with all these concerns, the majority of residents in the low-cost housing project (80%), the townships (90%) and suburbs (80%), rate the provision of municipal services as good or very good, with only the peri-urban area household members, 43%, stating that service provision is poor. This is also the area with the lowest level of payment for water services.

Residents living in low-cost housing projects have moved in to these houses from informal settlements, where they received services for free and hence had not developed a culture of payment. It is interesting that residents of low-cost housing projects support payment for water service, as they embed themselves in the identity of being a formal house ‘owner’, but that they struggle to afford to pay for water services and so cannot participate in the payment for water services. They also experience the challenge of paying for services on consolidated

bills, and when they have accrued debt created by someone else, as the transfer of low-cost houses takes place through private house sales. Many reported the financially crippling and stressful experience of taking over someone's else water debt and not being able to find a path through this, which leads to the coping response of not paying for services as the debt is just too high to address and does not belong to them.

3.4.3 Payment for services and water access in informal settlements and peri-urban areas

A summary of the main learnings from multiple studies conducted across informal settlements and peri-urban areas with the eThekwini Municipality shows that the majority of residents feel that they have fair and sufficient access to water, but that this is changing, with water availability is becoming more variable and the social and financial cost of obtaining it is becoming more challenging.

A study on the payment for sanitation services under WRC project: Piloting user-paid upgraded sanitation services for informal settlements, provides useful insight on informal residents' responses to payment for sanitation services. The social assessment studies reveal that in the absence of good services, informal settlement residents can afford to pay between R150 and R300 monthly for a private sanitation service, with R250 being the modal value. In central informal settlements in Durban, residents work in a wide range of places and under different conditions, from permanent to contract and piecemeal work. They also rely on social grants. The average income for residents of informal settlements when they work in formal or informal paid work is R150 per day. Salaries vary from R500 to R1 000 per week, R3 600 to R6 000 per month for better paying jobs, but on average people earn R150 per day.

Many people in informal settlements are unemployed and work in a range of informal activities to earn an income. Table 3-2 shows the amount they pay for different services in an urban setting on a monthly basis.

Table 3-2: Costs of basic services for informal settlement residents in Durban

Item	Cost
Rent	R500 to R1 000
DSTV	R120 to R580
Airtime	R10 to R400
Water	Free
Electricity	R20 to R500
Food	R100 to R2 500; Large households: up to R4 000
Transport	R30 to R1 000

(Source: Sutherland, et al., 2023b)

3.4.4 Shifting municipal discourses with respect to payment for services

Since 2021, eThekwini Municipality has communicated with citizens about the high costs and severe constraints the city faces in providing bulk water and sanitation services, providing services to households and in ensuring the operation and maintenance of them. The costs associated with the ongoing operation and maintenance of incremental services, including communal ablution blocks are high, and solutions need to be found. The municipality has acknowledged that there is insufficient capacity to respond optimally to the scale of the challenge of providing water and sanitation services and also difficulties achieving effective transversal coordination across municipal line departments and with the other spheres of government. Greater flexibility in funding grants provided by national government are required and procurement is often slow and cumbersome.

EWS, through the then Mayor Honorable Councillor Mxolisi Kuanda (8 March, 2023) provided an update on the state of payment for water services in informal settlements from a municipal perspective in 2023. The Mayor stated that at that time, informal settlement residents only pay for electricity. The cost of operating and maintaining services within informal settlements is high and financially unsustainable for the Municipality and new solutions need to be found, including the possibility of residents paying for a high level of shared service where it can be located closer to their dwelling (e.g. a mini-communal ablution block shared by a small number of households).

CHAPTER 4: CONCLUSIONS & RECOMMENDATIONS

4.1 CONCLUSIONS

This study has focused on payment for water services in South Africa and more specifically Durban, by considering the historical, political (institutional), social, economic, environmental and spatial relationships which inform the provision of water service at the national and local scale. It has included a literature review to provide an overview of the state of payment for water services in South Africa. Interviews and household surveys have been conducted to obtain the views of water sector specialists, municipal officials and household members on water service provision and payment for water services. The research has identified a critical question to be addressed to transform the governance, infrastructural, fiscal, social and spatial arrangements (or models to use a more techno-managerial term) for payment for water services:

> "How do we transform and safeguard water service provision at the local level, which is locked into a path dependency of provision and payment which is no longer resilient nor sustainable, by reconfiguring and rethinking the model for payment for water services, that secures the rights to sufficient water for all?"

Current arrangements are producing a crisis for WSAs in South Africa. The governance and fiscal model for water service provision was developed for historical and techno-managerial reasons to address the legacies of the past and to reduce inequality, but it is no longer working, for a wide range of reasons in the post-apartheid era, in a country which is facing multiple shocks and disruptions.

In countries elsewhere, where modernist, centralized systems remain functional, the workings of the water provision system are hidden and the pressures on these systems are not evident to citizens in their everyday lives. In the global south and in South Africa, the fragmentation, inequalities and challenges in the water provision system are visible to all in the following ways:

- in the way in which municipalities are struggling to provide water services, pay for and recover their costs, and deal with shocks and disruptions;
- in the lack of technological and managerial/leadership skills to deal with these complex challenges;
- in the research and writings of academics and activists, who document and try to find solutions that are sustainable and equitable;
- and in the everyday lives of citizens who do not have access to adequate and affordable water services, which manifests itself in forms of social mobilization, where citizens speak back to the state.

Within all these challenges, there is also the recognition and evidence that the post-apartheid state has been able to deliver water services to its people, at a scale and level which reflects considerable transformation and which shows that government is meeting its mandates. However, since 2016, there has been a decline in the quality of delivery of water services, and challenges with the governance and funding of water service delivery.

Shocks such as droughts, floods and social unrest, and the chronic shock of ongoing corruption and how it undermines the developmental state, have undermined these development gains.

The literature presents a well-established body of knowledge which is critical of the state of water service provision across South Africa, highlighting the inequalities and failures within the system, and referring to municipal dysfunction and state failure. This is countered by literature which recognizes the significant achievements national, and particularly local government, has made in improving access to water services across South Africa. This report argues that there is a middle ground, one which is reflective and pragmatic, and which acknowledges the achievements and challenges of local government in providing water services and ensuring payment for water services, while providing free basic water. An approach which identifies, explains and seeks to change the inequalities, failures and problems within the payment for water services system, to ensure a more sustainable water services future. One where the constitutional right of access to water is upheld, respected and safeguarded by all (state, private sector, research institutions, citizens) through greater collaboration, joint problem solving and the building of social cohesion and a social compact on access to water and payment for water services in the country.

This study aimed to understand the question of the payment for water services from the perspective of domestic water users at the local scale. This learning was situated and analyzed within the knowledge and experience of water sector specialists and municipal officials on payment for water services, drawing on legislation and policy to reflect on the norms and rules of service provision. The second phase of the study was not completed, due to constraints the municipality faced in piloting the three recommendations made for eThekwini Municipality, in the case study sites. The challenges EWS faced in conducting these pilot studies, are aligned with the broader challenges payment for water services face in the country, and highlight why and how municipalities have become ‘stuck’ in addressing this issue, which is complex and multi-faceted and connected to so many other challenges local governments are facing: poverty and inequality, dual governance systems, increasing informality, technological and capacity challenges, environmental, social and governance shocks, corruption and criminality, and path dependencies which reduce the room to manoeuvre.

A pragmatic perspective recognizes that all the challenges cannot be addressed at once, but it seeks to identify ways in which these challenges can be collectively understood, and which can lead to solutions and levers for change across all stakeholder groups (state, citizens, private sector, NPOs and NGOs, research institutions).

The main challenge facing both the state and citizens is how a model for water service provision, which includes providing water services to all, in a context where many cannot afford to pay for water services and need to access free basic water, along with the need to generate revenue internally within a municipality to pay for these services, can be sustained. Local government obtains transfers and grants to support infrastructure development and maintenance, with Equitable Share grants supporting the costs for free basic water, but the state needs to raise revenue to cover the costs of providing water to households under its jurisdiction. This creates a circular relationship between state and citizens: those who can pay for services are provided with a high level of services (to sustain their payment) and so continue to pay for services, and those who cannot pay for services, are provided with a low level of service, which means they will not pay for services if and when they can. There is also a middle group of citizens who receive a high level of service, but do not pay for services due to affordability, or an unwillingness to commit to their responsibilities as a citizen.

Negotiating and working out how to address this challenge, and how to allocate and provide free basic water, within this equation, is central to the provision and payment of water services into the future. In South Africa, with high levels of poverty and equality, a position that supports the provision of water to those who cannot afford it is well established and supported by both the state and citizens. Research on payment for water services in other countries in Africa, shows that citizens are required to pay for water services, which means they pay to have water purified, cleaned and delivered to them, with local level committees deciding who can be excluded from these payments, due to their depth of poverty. They commit to paying for the service, not to paying for water.

The provision and payment for water services reflects the relationship between national and local government and the citizens of South Africa. The practice of water service provision reveals where there are challenges in this relationship and how it may be changed, to provide a more sustainable and equitable future. The social compact between the state and its citizens around the payment for water services is defined by the International Covenant on Economic, Social and Cultural Rights (ICESCR), the main international law governing socio-economic rights, which South Africa ratified in 2015, in terms of the right to an adequate standard of living, which includes the right to water, the constitutional right to water (and adequate service provision), and legislation (National Water Act, 1998; Water Services Act, White Paper on Local Government, 1998, Strategic Framework for Water Services, 2003, Free Basic Water Implementation Strategy, 2002, revised in 2007, National Norms and Standards for Domestic Water and Sanitation Services, 2017) (see Sutherland and Tissington, 2022, for more detail), as well as municipal policies and by-laws. These legal and policy frameworks outline both the human right to water, ensuring that water is accessible and affordable to all, realised as a progressive right, and the roles and responsibilities of the state and citizens (norms, standards and practices), in relation to the provision, consumption and payment for water.

The payment for water services discourse and practice in South Africa recognises the high level of poverty and inequality in the country, with the Free Basic Water Policy aiming to ensure that 6 000 l of free basic water is provided to indigent households, forming part of the social wage. The literature highlights the challenges with the provision of free basic water, including to whom it is delivered, how much is delivered and on whose terms. Beyond these critiques and concerns, free basic water is delivered to the urban and rural poor, meeting basic needs (and in some cases unlimited needs) for water, where water infrastructure is available. Information on the number of people obtaining free basic water varies depending on the scale at which the data is being assembled and the way in which it is monitored and measured.

Free basic water is a cornerstone in ensuring that the human right to water is upheld in South Africa, but the practice and distribution of free basic water remains unequal and contested, with the cut-off point and amount of free basic water requiring debate and further negotiation. This raises the question about how a social wage for water can be delivered within a social welfare state. Should the state continue to focus on the provision of free basic water, or should it rather extend and increase cash grants to the poor, to provide them with more agency and flexibility in how they secure water, either through paying for state provided water services, which they can resist, if service delivery is poor, or where they can in part fund their own solutions to water service provision through a higher level of cash grants, as Lawhon and McCreary (2023) suggests in their book *Enough*? Given that free basic water is embedded so deeply in the everyday lives of many citizens across

South Africa, a shift in this approach will need careful consideration. Across the board, officials, water specialists and citizens all agree that there should be the free provision of water to those who are poor and cannot afford to pay for services.

The relationship between citizens who can afford to pay for water and the state, is defined by tariffs and a payment for water model which requires stability of payment, as the local state relies on this revenue to cross-subsidise water to those who cannot afford to pay. A lack of trust in the state and the failure of the state to maintain infrastructure and provide reliable services, is undermining its ability to collect revenue from customers and is eroding their willingness to pay. Shocks and a shift toward the green circular economy, have led citizens to move themselves off the grid, accessing alternative technologies, thereby impacting on the stability and amount of revenue generated. In cases where citizens do not pay, enforcement is challenging to implement, with the state using the threat of limiting flow and cutting off water due to non-payment. Debt relief programmes are offered by local government, in an attempt to assist citizens with water payments.

The local state invests significantly in sustaining its relationship with paying customers so as to ensure a stable revenue. This in turn gives these citizens power, as their complaints about breaks in service delivery will be attended to more quickly. The results from this study show just how variable the relationship between citizens, who do not qualify for free basic services and those who live in dual governance areas, and the state are around payment for water services. This complexity is contributing to the crisis in local government where the system of payment for water services follows a structured, techno-managerial approach, which does not align well with the fluid practices on the ground. Water is provided at different levels of service, outlined by the water ladder: bulk level of service, minimum level of service, middle level of service, full level of service and interim services. The differential provision of services changes the governance relationships between the state and citizens, creating a different perception on accountability and responsibility and requiring different responses for different citizens, as defined by their level of service provision.

Progressive frameworks provide guidance on how water services are conceptualised, produced, distributed, funded and allocated to whom, and on what terms, and how state-citizen relations and governance arrangements are arranged, however, the practice of water governance is far more complex and variable. It is re-shaped by the changing relationships between the state and citizens in reality. The research has shown that the relationship between state and citizens around payment for water services is shaped by histories and geographies, as settlement types and context, play a major role in the payment of water services and inequality in service provision. Understanding and mapping spatial patterns of payment for water services helps to address how the universal provision of water services and the payment for water services, within a spatially differentiated service provision model, can be achieved fairly and justly. The research has shown that the rapid development of the peri-urban areas of Durban under dual governance, has created the tipping point for funding and implementing the equitable provision of services within the city. While there is variation and change within township areas, and with informal settlements provided with free basic water which is publicly controlled, the greatest pressure and variability comes from the areas in the urban periphery, where the majority of residents are not paying for water services, no matter what their financial circumstances are and where they are reshaping and reconfiguring the water provision networks. It is in this area, the space of dual governance in the city, that the greatest effort needs to be made to negotiate and decide upon the social compact for water

provision in the city. The issue of governance, land, and land management in these areas, has yet to be resolved with a hybrid approach required, but until the governance and roles, responsibilities of all stakeholders in these spaces is negotiated, debated and resolved, it will be very challenging to develop a system of payment for water services on traditional authority land. This challenge was highlighted in Durban's Resilience Strategy (eThekwini Municipality, 2017). A collaborative approach that includes all stakeholders is required. National Treasury has attempted to broker a solution and a flat rate for rates and taxes and service provision has been suggested, but this will be contested until a uniform standard of services that are reliable are provided to these areas. The mapping of cadastral boundaries has been attempted by EWS using polygons on remote sensing images, but many of the areas in the periphery of the city are rapidly developing and so even this process is not able to keep up with real time changes. The relationship between the city and the traditional authority can be strained, as a result of confusion over authority and governance in the areas of shared jurisdiction.

The current model which differentiates between free basic water and a tariff system, can work in principle, but the nuances and complexities of applying this model in practice needs greater engagement and reflection, as this report has shown, due to its complexity in reality. The research on eThekwini Municipality undertaken for this project shows that 44,6% of residents in eThekwini Municipality have access to free basic water, and with 26% of residents living in informal settlements, and 43% of the municipal land area under dual governance on traditional authority land, this may be even higher, given that the majority of residents in peri-urban areas do not pay for water services.

The study has highlighted the need to form collaborative partnerships between the state and citizens, between municipal administration and traditional authorities and between private contractors and the state, which includes knowledge brokers who can act as intermediaries, to re-negotiate and to reform the way in which citizens receive free basic water or pay for water services in South Africa. Using a top down approach, which relies in the implementation of legislation and policy through a managerial approach will not enable sustainable solutions to emerge. Citizens want certainty, transparency and clarity on how water service provision works and is implemented, and they also want this system to be fair. This relates to clear communication by the state, and engagement with citizens, about what the social contract is around water service provision at the national and local scale. It also means that the instruments used to manage the provision and payment for water services (bills, water meters, flow restrictors, tariffs) are transparent, well managed, working and evident. Citizens have raised the issue of meters not working, of incorrect billing, of not obtaining bills and of the state not maintaining water services and providing a reliable water supply, while still continuing to charge customers for the service.

Water service provision is provided through centralised modernist systems, which do not reach all citizens equally. The expansion and maintenance of infrastructure is a major challenge in most municipalities, with maintenance being prioritised in areas where there are high levels of payment of water services. The provision of water services has always had diverse elements, with natural water bodies and rainfall, and water tankers and water sachets providing water where infrastructure is not functioning for long periods of time or is absent, with communities accessing their own water through natural systems. Water provision is mostly efficiently and safely provided through centralised systems, however, addressing the inequality in this provision and how to fund its redress remains a central question that the current fiscal model for water services is not able to

address. The diversification of service provision through alternative infrastructures and payment systems may offer new opportunities as infrastructure enables the movement of things, which can account for different contexts and levels of inequality. Revisiting the way in which these infrastructures are configured, including investing in ecological infrastructure for the local provision of water, rather than being locked into a path dependency, which means you tinker with small changes within the system, ending up managing the risks and dangers, rather than finding new pathways to better futures, is required. Reflecting on a balance between large scale centralised solutions and locally developed approaches, and how these different approaches could be financed needs to be considered. This is happening in terms of sanitation provision in Durban, as well as in catchment rehabilitation projects and so learnings from these sectors could be translated into water service provision.

The study has shown that the payment for water services model for domestic users' needs to evolve and be modified through reflective processes; it needs to be more inclusive, drawing knowledge and learning from a much wider range of stakeholders; it needs to align the technical and systems focus of the municipality for water service provision with the complexity of reality and the agreed upon outcomes of service delivery; it needs to be able to respond to disruptions and change; and it needs to be robust so it can adjust to failures, with built in redundancy that enables it to be flexible. Palmer et al., (2017) argue that what is required is that capabilities rather than capacity is built into the way in which water services are provided and payment for water services is governed. This means that the reform that is undertaken relies as much on approach that is developed relies as much on 'values, relationships and organisational culture" as it does on "human, natural and financial resources, and systems" (Palmer et al. 2017, p 9). This relates strongly to the main arguments of this report, namely that environmental, socio-economic, settlement, institutional (actors and rules) and organizational (technical, managerial and governance) dimensions are all central in creating a more equitable and sustainable approach to service provision. In the South African case, this will require good leadership, technical skills, great collaboration and the sharing of knowledge and the commitment of all stakeholders to develop an approach to water service provision that builds social cohesion and citizen identity, rather than dividing it. The role of research institutions and other knowledge based organisations in acting as bridges and intermediaries in this process between the state and citizens is critical, rather than them being hyper-critical, adversarial and confrontational. This affirms the need, as Palmer et al, (2017) argue for the transition to sustainable solutions to centre on both technical and socio-political skills and relationship building.

The relationship between national and local government, with local government being powerful and such an asset in South Africa to the development agenda, and which sets the country apart from its African counterparts, needs to be addressed, with national government providing greater support to local government, that goes beyond political patronage or conflict, and which enables competent municipalities to take the lead and drive change, which is appropriate to their context. Both local and national government needs to build stronger partnerships with the private sector and communities, as well as with research institutions, as the state cannot solve these problems alone. The challenge of multi-scalar debt burdens and structural poverty, is that municipalities cannot resolve the issue of the funding of water services by creating responsible citizens or expecting those that are paying for services to pay higher tariffs. As a result, the quality of the service declines, as the state cannot expand or maintain the networks and operations for water service provision. This decline is not uniform, with differences between water systems by geographical area or settlement type, which reflect

the inequalities of the past and the failure of transformation in the present. This is pattern is becoming increasingly evident as a generation of capital investment has not taken place, resulting in the water provision system reaching a tipping point, which is evidence in the decline in services countrywide since 2016, which increasingly coincided with the last major drought and local government elections.

Corruption and criminality in South Africa is widely cited as undermining service provision in the country and in undermining the development gains made post-apartheid. Corruption is a systemic issue and criminality is rapidly increasing, deepening poverty and vulnerability and destabilising society. This is a major problem that society, with all the instruments it has at its disposal to support a good society, needs to activate and support.

The above discussion has outlined how interconnected the challenges for the payment for water services are, cutting across the dimension governance, territory and state-citizen relations, infrastructure provision and geographies, fiscal flows and geographies, settlement geographies and social and environmental risks. In more simple terms, the main findings of the research are presented in Figure 4-1, which outlines the dimensions and issues that need to be negotiated, engaged with and balanced to find a solution to payment for water services within non-revenue water.

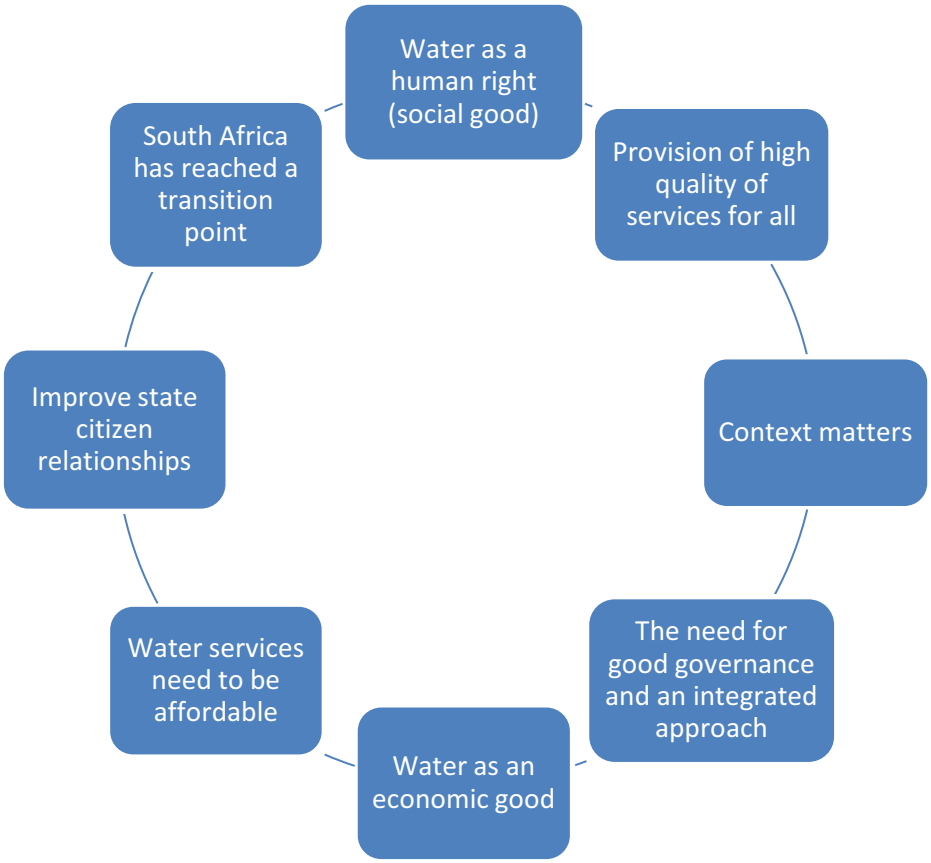

Figure 4-1: The main themes that need to be addressed in the reform of the payment of water services

4.2 RECOMMENDATIONS

The following broad recommendations have emerged from the study.

1. National government needs to provide more financial resources to local government, respecting the critical role local government can play in equitable and sustainable service provision.
2. National and local government needs to focus on capabilities rather than capacities, determining through collaboration with other actors (private sector, research institutions, civil society organisations and citizens) who can do what, where, how and why to reform the model for the payment of water services.
3. The social compact between the local state and citizens over the provision of water services and the payment for these services need to be revisited, discussed and reformed, through engagement at the local government level, between all stakeholders in the city, using a collaborative approach that draws on the co-production of multiple knowledges and experiences. The national and local state needs to provide good leadership by delivering clear and transparent messages about payment for water services.
4. National Treasury and national government need to engage at the local level, listening to and learning from emerging governance platforms (which in many cases include local government) that are supporting new forms of state citizen relationships in rural areas, towns and cities across the country, so as to connect the mobilisation of resources from the national state, to the reality of the everyday lived worlds of citizens. This will support democratic and participatory local governance and the co-production of knowledge and action, which is where most the solutions to our broader systemic problems lie.
5. There needs to be much more frequent engagement between the state and citizens at the local level over water service provision, through water dialogues, focus groups, user platforms and electronic and social media communication.
6. The concept and practice of free basic water is central to transformation in South Africa and is strongly supported by all stakeholders, but the way in which free basic water is provided, how much is provided and on what terms it is provided, needs to be reconsidered, drawing on the wide body of literature and experience that exists, particularly in addressing the ways in which the free basic water policy, can undermine benefits to the poor (through a welfare maximising approach).
7. Local government needs to communicate clearly with its citizens and it needs to be responsive, accurate, fair and consistent in how it bills paying customers. It needs to ensure its instruments of control, are working and are maintained.
8. Corruption and criminality, which ultimately impacts on the poor the most, needs to dealt with and not tolerated.
9. Tariff structures need to balance the need to reduce the consumption of water, with the cost of block tariffs to ensure sustainable revenue, to address affordability and to not pass the impact of poor revenue generation on to the poor.

10. Local government needs to design a safety net process for households that fall into debt, to support them in finding a way out of debt, rather than not addressing the problem or being overly punitive, which will lead them to access illegal water.
11. Collecting accurate data and knowledge on water services and payment for water services from the local level is essential as data collected at higher scales often does not reflect reality and hence is unhelpful in improving water service provision. Lived experience is a key site of knowledge and while not all citizen data can be collected, ongoing studies in local spaces can be very helpful to identify patterns and changes in the system.
12. Engagements between the local state and citizens, which go beyond the mediating role of councillors, can enable stakeholders understand each other and the challenges they face in addressing common problems, helping them to find more workable and acceptable solutions. Research institutions can play a critical role in this regard.
13. Instruments and enforcement are not useful unless there is good and efficient billing as well as good credit control and debt management. Citizens do not like estimated billing and prefer to know their usage and costs for each month.
14. Leverage technology, remote sensing and AI to improve water monitoring, metering, billing and payment for services. The use of pre-paid meters and smart meters needs careful consideration as these instruments are not always able to solve complex problems and they require ongoing administration and maintenance. Often simple is best.
15. Community associations and water sharing can be considered as an alternate way to distribute water in localities where the provision of infrastructure to each household is not possible. These can also lead to the non-market exchange of water within a community during times of need. This form of water collection is part of informal water economies and it can provide communities and households with safe and reliable water but it can also be exploited by cartels.

The following recommendations relate specifically to eThekwini Municipality and inform the three interventions designed for the study; (i) to fix meters in all households to ensure accurate and transparent monitoring of water use, (ii) provide a consistent and reliable supply of water in the neighbourhood, and (iii) develop a social compact that includes traditional authority leadership and support dialogue through this social compact. These can all be applied to other municipalities within South Africa.

1. Reliability of water supply (get the basics right). Focus on the basics of service provision, ensure the maintenance and fixing of infrastructure, which will build trust with citizens. The Municipality needs to build back resident's trust by ensuring that the water supply is reliable. Residents will feel they are getting "value for money" and begin paying for services.
2. Build institutional capacity across all societal institutions, including local government and traditional authorities to improve water service provision and to negotiate and form a social compact around service provision.
3. Models for payment of water services needs to be designed with the people who are paying for the services in mind, to meet their needs, to understand their level of affordability, to build from and re-negotiate their understanding of what it means to be a citizen, and to develop a fiscal model which

uses state resources wisely, does not enable the wastage of water, and which leads to a moral, responsible and progressive local government, which includes politicians, officials and citizens.

4. Change the discourse around payment of water services, where those that pay are prioritized, as investing in good and equitable services for all, a universal level of services, will in the long run be more sustainable and will build social cohesion and trust in the state. This requires a commitment to funding towards getting the basics right through prudent and good management of water service delivery. People will pay for services that are reliable and good. This will enable local government to focus on free basic services where they are justly required.
5. Develop an approach to delivery good and reliable water services and payment for services using a universal approach to service levels, which is possible with water provision, but in its implementation, management, maintenance and payment takes context (settlement typology) into account. Be aware that settlement types are not homogenous and care should be taken to differentiate across settlement areas. For example, wealthy people live amongst poor people in areas under traditional authority, middle class people buy and move into houses in low cost housing projects and live amongst the poor.
6. Develop participatory education programmes, focused on joint learning to build a capacitated and knowledgeable citizenry, that engages in the delivery of services through reporting of leaks and maintenance issues, is accountable and responsible with regard to payment of services, where the costs are just and fair and who understand the constraints facing the municipality in service provision, but hold the state to account for what it is mandated to do.
7. Communication with citizens. Better communication is key, residents need to understand what their bill really means, they must be able to find the tariff on the bill. The bill is the key communication instrument between residents and the municipality.
8. Councillors need to be trained on budgets and financial processes.
9. Be consistent, transparent and fair in the provision of free basic water, ensuring that paying customers can trust that this is being well administered.
10. The municipality needs to build trust and confidence in its services. Customers need to see that EWS is working hard to and achieving its non-revenue water reduction target, especially around fixing burst pipes and leaks timeously. Debt collection rates go down as non-revenue water is addressed and the impact on the quality of service delivery is visible. When there is no money for services, people do not get services, and this result in a snowball effect where people do not want to pay. One should remember that municipalities offer a basket of services, and non-payment for water services lead to a downward spiral of viability, which affects all services, not only water.
11. Ensure Equitable Share is used for free basic water and that it is not diverted elsewhere, as it is possible for it to cover costs of free basic water in municipalities but indigent data needs to be up to date. The fact that there is no reliable expenses benchmark in South Africa is another complicating factor.
12. Municipalities do not apply debt collection strategies as they should. They should discipline people who do not pay when they can, but simultaneously indigent management, and a social safety net for

those who cannot afford to pay, should be in place. Restricting flow can be an effective way to manage over-use and non-payment.

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